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NEUROLOGIC MANIFESTATIONS IN PERNICIOUS ANEMIA

A NEW CONCEPTION RELATIVE TO THE ETIOLOGY *

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KANSAS CITY, MO.

Pernicious anemia as a disease entity was described first by Addison [1] in 1849. Biermer,[2] in 1872, furnished a good description of the disease. The former described the malady as idiopathic anemia, and the latter first used the term pernicious anemia. They were attracted to symptoms referable to the blood and gastro-intestinal systems. To honor these two pioneers, the English physicians frequently use the term Addison's anemia, and the Germans, Biermer's disease.

While some indefinite symptoms referable to the nervous system are mentioned by Little [3] and Lichtenstern,[4] yet a real conception of an involvement of the central nervous system was reported first by Lichtheim [5] in 1887. He described three cases with clinical neurologic manifestations and a pathologic report recording posterior and lateral column degenerations. Putnam,[6] Dana,[7] Grainger Stewart [8] and von Noorden,[9] in 1891, added materially to our clinical and pathologic knowledge of subacute combined degenerations of the spinal cord in pernicious anemia. Since that time valuable accretions to our literature have come from Minnich,[10] Nonne,[11] Lloyd,[12] Bastianelli,[13] Petren,[14] Russell,[15] Billings,[16] Bramwell,[17] Dejerine,[18] Schaller,[19] Woltmann,[20] Hamilton and Nixon,[21] and many others.

The significance of pernicious anemia, in a general way, is perceived fairly well. The frequent involvement of the nervous system and its importance have not been recognized adequately, but lately there has been much improvement respecting this feature. Woltmann states that the nervous system is involved in 86 per cent of the cases. I believe that this figure might be a larger one, especially if we consider the very earliest, mild subjective sensory disturbances in the lower extremities so frequently described as the first sign of the illness and which cause the patient to seek relief from a physician. Other sensory and motor symptoms and disturbances of coordination in the lower extremities frequently appear early. Thus the topic is exceedingly important from a neurologic point of view.

The clinical and pathologic manifestations may be described under three main headings: gastro-intestinal, blood, and neural system.

GASTRO-INTESTINAL

An achylia with achlorhydria appears early and in a high percentage of the cases. There will be found an absence of free hydrochloric acid in at least 98 per cent. A few instances are on record in which the acid was absent a number of years before sufficient clinical symptoms appeared to make a positive diagnosis of pernicious anemia. However, it must be remembered that free hydrochloric acid may be absent in persons seemingly well. Hurst [22] states that constitutional achlorhydria appears in 4 per cent of all persons. A so-called glossitis frequently is cited. The atrophy of the papillae results in the characteristic velvety, glistening appearance of the tongue. Intestinal symptoms are recorded.

BLOOD

The blood picture received earlier and more attention from medical men than the alimentary or especially the neural manifestations. Poikilocytes, microcytes, macrocytes, and various embryonal types of erythrocytes are observed commonly, but frequently one or all of these are absent in cases in which the diagnosis of pernicious anemia is certain. A leukopenia may be present. The high color index long has been regarded as a very important diagnostic sign, although some consider the increased volume index as more accurate. Haden [23] emphasizes this point. The characteristic lemon tint of the skin and mucous surfaces has been ascribed to the destruction of the erythrocytes.

NEURAL SYSTEM

Clinical and pathologic studies of the neural system would suggest a division into three groups; namely, (1) the spinal cord, (2) the peripheral nerves, (3) the

* From the University of Kansas School of Medicine, department of neuropsychiatry.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

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brain. The first named is by far the most important and the best known.

1. *Spinal Cord.*—Among the earliest clinical manifestations referable to the spinal cord may be mentioned the tingling and numbness in the feet and fingers. About this time we may demonstrate an impaired joint and bone sensibility. Various paresthesias may develop. Different degrees of impaired epicritic or protopathic sensibilities may appear later. A slow extension of these symptoms from extreme peripheral parts toward the trunk continues, as a rule. At times a delayed sensation, such as is seen frequently in tabes dorsalis, may be noted. Hyperesthesias are demonstrated infrequently. The syringomyelic syndrome has been reported for a few cases of subacute combined degeneration in pernicious anemia.

Various degrees of incoordination involving early and to a greater extent the lower extremities are recorded frequently. Such incoordination may resemble closely that seen in tabes or cerebellar types of disease. Rombergism is established in a mild degree at times.

Fig. 1.—Very severe funicular degenerations of anterolateral columns, less of posterior columns but with greatest amount near median septum, still less of crossed pyramidal, and very slight of spinocerebellar pathways.

Much motor weakness appears only late. When present, it is extensive. The paralyses present the spastic type as a rule, although a flaccid neuromuscular state is possible. A combination of the ataxic and paraplegic gait may be observed. The true motor weakness may be accounted for by the degenerative changes in the crossed pyramidal pathway in the lateral column, and ataxia to the same process in the spinocerebellar and posterior column tracts. Some muscular atrophy has been noted in the late stage.

Striking pathologic changes in the spinal cord are the rule with a few exceptions. The clinical manifestations may not be explained always by the gross and microscopic observations. There are a few cases on record in which clinical examination indicated an involvement of the cord, but in which the necropsy revealed no changes. It is difficult to appreciate this discrepancy. The microscopic technic may have been faulty. A funicular degeneration of the central portion of the posterior column is among the earliest of the changes. An involvement of the spinocerebellar pathways and crossed pyramidal tract is next in frequency. In more severe cases or in advanced stages, practically all of the long pathways in the spinal cord may exhibit some abnormalities. The short association pathways and gray substance usually remain intact. There are only a very few recorded exceptions in which the anterior horn cells show some quite mild tigrolysis. Diffusely distributed vacuoles are seen in the degeneration of the white columns. The method of formation of these small vacant spaces is somewhat uncertain. Some increase in the neuroglia tissues to replace the destroyed parenchymatous elements has been noted. This gliosis is not as marked compared with many other diseases of the spinal cord with degenerations. One striking fact in connection with the pathologic changes in this disease is the absence of any inflammatory evidence.

2. *Neuritis.*—Some difference of opinion exists relative to the frequency of a true neuritis in pernicious anemia. However, many cases are on record, and a few diagnoses have been proved by necropsy. Three years ago I reported one case from the University of Kansas, in which the patient was suffering from a well defined subacute combined degeneration of the spinal cord in pernicious anemia. The clinical observations for a severe parenchymatous neuritis were quite definite. It will be somewhat more difficult to correlate the clinical results with an estimation of the pathologic process when both the peripheral nerves and spinal cord are involved in the same patient. An optic neuritis is seen less frequently. The loss of vision may advance to a complete degree. Retinal hemorrhages too are described.

3. *Psychotic Manifestations.*—Some mild, frequently indescribable, changes in the mental state are noted quite often. A severe or major psychosis appears infrequently. Impaired cerebration with marked memory defect belongs only to the late stage, as a rule. Epileptiform attacks have been reported. Possibly some of the clinical cerebral manifestations could be attributed to the severe anemia alone. The pathologic changes in the tissues of the brain that have been reported are not so striking in comparison with those of the spinal cord. In fact, the funicular or tract degenerations are not found in the encephalon.

The case here reported is an unusually interesting instance of subacute combined degeneration of the cord in pernicious anemia.

REPORT OF CASE

E. B. B., a man, aged 60 at the time of his death, had followed clerical work all his life. His wife was well, his two children died in early infancy, he had an ordinary case of typhoid at 16, and he stated that he had never had syphilis.

The onset of the trouble was about five years before I saw him, at which time the patient noticed numbness and tingling in the feet. This extended to the trunk and arms in two and one-half years. Some pains in the lower extremities and arms were present only in the very late stage. The patient gradually became worse until he died with only a very few short remissions.

In our examinations we found a mild glossitis, and some of the lemon tinted color of the skin. During the last year of his illness he was able to use his arms with much difficulty. He had almost a complete paraplegia, being able to use slightly the right leg. The distal muscles showed the greatest amount of weakness. Marked deformities, contractures, and some atrophy of the muscles of the lower extremities were present. About six months before death, the deep reflexes were present at the patellars and Achilles, and abnormally brisk in the upper extremities. Marked Babinski and Oppenheim reflexes were present. The feet and legs were unusually cold, with a slight edema at times. All forms of sensation were impaired in the lower extremities, and this state extended up on the

trunk as high as the fifth dorsal cord segmental area. The same state involved the ulnar side of the arm and hand to a lesser degree. Incoordinations, as far as could be determined, were present.

One complete blood count gave 2,604,000 erythrocytes, 4,500 leukocytes, hemoglobin 65 per cent, a color index of 1.25, and a volume index of 1.44. There was no poikilocytosis, and very little anisocytosis; marked increase in thickness was observed, but no nucleated reds were present. Another count gave 1,800,000 reds, 4,600 whites, and a color index of 1.36.

Fig. 2.—Higer power magnification of posterior white columns.

The stomach analysis showed a complete achlorhydria. Several spinal fluid analyses were made. They showed a moderate increase in the pressure, no pleocytosis, a mild positive Pandy, and a negative Wassermann reaction. On one occasion a positive Wassermann reaction was obtained, but this might be questioned.

The pupils reacted fairly well to light and in accommodation, and the eyegrounds showed no evidence of syphilis. There had been present some change in the mental condition of the patient. His memory had been impaired slightly. He had been more irritable during the last year. However, in spite of all his infirmities, he was able to carry on a clerical business from his residence, with practically no loss of time until within ten days of his death.

The necropsy was limited to the spinal cord. It was considerably smaller throughout than the normal, this being more marked in the lower dorsal and lumbosacral segments. Cross sections of the spinal cord in the lower dorsal and lumbosacral regions showed extreme degeneration in most of the long columns of the white substance. This was most marked in the anterolateral region, which showed almost a complete loss of substance. The severe degenerations in the posterior columns showed typically the greatest amount of degeneration near the median septum. The crossed pyramidal pathway was involved mildly. There was only a slight degeneration of the spinocerebellar pathways. The gray substance remained practically intact. There was a total absence of any evidence of inflammatory processes either in the cord or in the meninges. The blood vessels showed no evidence of syphilis.

COMMENT

A summary of this case covers a period of illness in this man between the age of 55 and 60, who previously, for many years, had been known as a hypertensive or nervous person. The clinical signs at first suggested tabes, for which disease he had been treated by several physicians for short intervals The severe degenerations of a noninflammatory character involving the long pathways of the spinal cord, without producing much disturbance of the sphincteric functions, and no decubitus, is remarkable. It is exceptional to find the anterolateral columns involved in such a comparatively severe degree in subacute combined degenerations of pernicious anemia.

PROGNOSIS

The grave prognosis for pernicious anemia in general is never disputed. In many cases with a marked neural syndrome the outlook is even worse. The remissions are fewer and shorter when a well defined subacute degeneration of the spinal cord has been established.

ETIOLOGY

If we analyze carefully the literature bearing on pernicious anemia in all its phases, including the late works on this subject, we are attracted to the general feeling of uncertainty relative to the cause. Possibly better progress in the treatment during the last few decades might have been expected, had more knowledge been at hand relative to the etiology.

Many infectious diseases, including influenza, enteric disorders, typhoid, scarlatina, sprue, malaria and syphilis, have been cited as being the cause or a factor in the etiology. The spleen has been indicted, and even removed by some surgeons, with no benefit. A special lipoid substance, pointed out as being found chiefly in the ileum, has been named as a cause. It is generally conceded that all the blood changes are secondary and possibly due to some toxin, acting directly on the erythrocytes or hematopoietic organs.

There is much discussion relative to the achylia, and especially the absence of free hydrochloric acid, being primary or secondary. Certainly the anemia cannot be considered as the cause of the cord changes.

For a long time our attention has been directed to an intoxication from the lower alimentary tract. Many research workers attribute this to an abnormal flora in

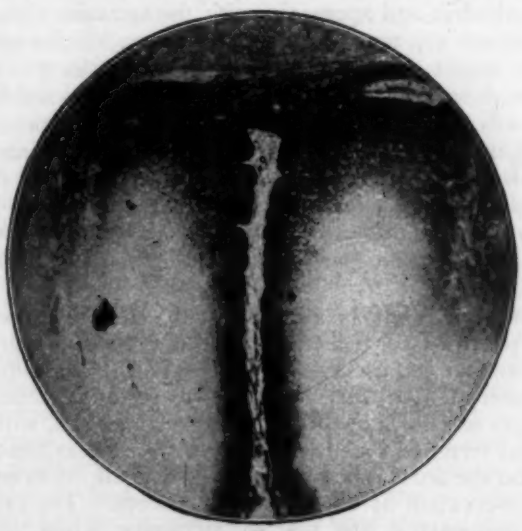

Fig. 3.—Higher power magnification of anterior white columns.

the ileum and possibly the duodenum. It has been demonstrated in human beings and in animal experimentation that, if there is no free hydrochloric acid secreted or found in the stomach, many of the bacteria normally found in the large intestine, such as *B. coli-communis, Bacillus welchii* and streptococci, will thrive in the small intestine and even be found in the stomach. It is pointed out that most of the numerous varieties of bacteria normally existing in the mouth may live in the stomach when free hydrochloric acid is absent. This condition of absence of certain gastric secretions, with

possibly secondary changes of bacterial content in the small intestine, may be a secondary or terminal state.

I desire to offer a theory that will clear up the nature of the cause of pernicious anemia. While this conception has existed in my mind for some time, it has not been discussed before any scientific assembly until very recently, nor published in any journal. Attention will be called first to a few salient facts. Pernicious anemia has its onset almost entirely between the ages of 40 and 60, and is practically unknown before the thirty-sixth year. It is considered a chronic and fatal disease. Our observations and records of the very earliest stage may be quite deficient. The recorded pathologic work deals chiefly with terminal states. Three great and important anatomic and physiologic systems of the body are concerned in the clinical observations and in the terminal morbid changes; namely, the blood with its hematopoietic organs, the alimentary tract with its various secreting glands, and the nervous system. All of these organs are the seat of morbid processes during some portion of the course of the illness in more than 90 per cent of the cases. The initial deviations from the normal may be found in the field of pathologic physiology only. The vegetative nervous system is the chief or only nerve supply to the stomach and intestines, including in particular the digestive secretory glands and their circulatory organs. The parenchymatous portion of the brain and spinal cord have apparently no innervation, but their vascular supply depends on the same vegetative nervous system.

I have arrived at the conclusion that pernicious anemia has its origin in some deviations from the normal, originating in the vegetative nervous system. This derangement is purely physiologic at its inception and for a certain period following. The deficiencies in the secretions of the alimentary tract, particularly the achlorhydria and apepsinia, with the secondary glandular atrophies, naturally would follow. Subsequently there would appear the pathologic flora in the small intestine with the formation of various toxins not found normally. These abnormal chemical products elaborated in the intestinal tract, absorbed slowly into the circulation, could then serve the three important tissue groups previously considered. Thus, insidiously, there are produced the profound anatomic changes in the spinal cord, brain, peripheral nerves, blood stream and bone marrow.

Attention might be focused on the three great vertebral plexuses in the chain of the vegetative nervous system, but let us consider in particular an impaired function of the solar plexus. Even early anatomic changes are not impossible. The solar plexus, with the several terminal plexuses and numerous lesser branches around the aorta and smaller vessels, is all important in the innervation of the abdominal viscera. The cardiac and hypogastric are not so attractive when one is searching for a source of the earliest trouble in pernicious anemia. Autonomic and sympathetic connections are present for all these plexuses, permitting brain and spinal cord influences.

We must look further for operative causes that can produce such profound changes in the vegetative nervous system. Pernicious anemia occurs especially in hypertensive individuals among the more highly civilized peoples. The disease is found among males about three times as frequently as in the female. It makes its appearance almost entirely in the fifth and sixth decades. Anxiety and stresses relative to the problems of life together with this age of declining functions and slow tissue retrogressions should also engage our attention. When such conditions have been present over a long period, with insidious, slow continuous insults, there would be registered either physiologic or pathologic evidences in the three prominent plexuses of the vegetative nervous system. The solar plexus, also designated by the names celiac, epigastric and abdominal aortic, is the major one concerned in this problem. Perhaps it is unnecessary to call attention to a number of brilliant physiologic experiments on record which show the effect of emotional states on digestion. Secretions in the stomachs of cats and dogs have been checked completely at any stage by the introduction of factors of great annoyance or fear.

SUMMARY

1. Three main tissue systems are exceedingly important in the symptomatic and diagnostic considerations of pernicious anemia. Evidence of varying types of subacute combined degeneration of the spinal cord without inflammatory changes will be found in more than 85 per cent of all cases of this disease.

2. For a reasonably accurate clinical diagnosis of pernicious anemia with subacute combined degeneration of the spinal cord, an achlorhydria and a volume or color index greater than 1 are essential.

3. Abnormalities of the flora and pathologic toxins in the small intestine may be secondary or terminal states.

4. Physiologic or pathologic changes in the vegetative nervous system may be considered the primal source of the trouble. Especially is the solar plexus involved. Continuous emotional strains resulting from anxiety and worry are potent factors in the early etiology.

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ABSTRACT OF DISCUSSION

DR. WALTER F. SCHALLER, San Francisco: I think we all feel that the toxic element is the predominant one in cases of spinal cord degeneration with anemia. As I understand Dr. Skoog's development of his theory, he feels that the toxic process acts through the intermediary of the sympathetic nervous system. It is now the fashion to attribute many of the conditions that we poorly understand to disturbed action of the sympathetic nervous system. There is a wonderful domain to be opened up by further study of the sympathetic nervous system, and one way to go about it is through fundamental examination of this system, not only anatomically and physiologically, but also pathologically. We should go a step further in our necropsies of today, and no necropsy should be considered complete unless we give as much attention to the sympathetic nervous system and, say, the endocrine system, as we do to the different organs of the body and the cerebrospinal system. Therefore, in order to investigate this theory it would be very wise to investigate the sympathetic nervous system in anemia and the combined system degenerations along these lines. To turn to the clinical side of this most interesting problem, we are seeing in our clinic a great many cases diagnosed as subacute spinal cord degeneration. When we see a person with a gradually oncoming spastic paraplegia with marked paresthesias of the extremities and no pain, and when we find that he has a lack of free hydrochloric acid in the stomach (a stomach analysis is done when this cord condition is suspected) and we find that he has a high color index, without any anemia, we are prepared to make a provisional diagnosis of subacute spinal cord degeneration on the basis of a future anemia, generally of the pernicious type, and rarely do these cases fail to show, on searching examination, not just focal infection, but marked focal infection. That leads up to the treatment of these cases. The focal infection should be cleaned up at once. This, of course, is in the line of Hirsch's

work. When we clean up their focal infections and feed them hydrochloric acid (we give them tonic and supportive treatment by arsenic and physiotherapy), we can often arrest cases very satisfactorily. I do not say we can cure them. I remember two patients that I thought were cured; they had lost many of their clinical symptoms and the blood picture went back to normal and the remission lasted until the patients were lost to observation.

DR. A. L. SKOOG, Kansas City, Mo.: Dr. Schaller has called attention to the toxic condition. I might say that I do not know that this toxic condition coming from the intestinal tract is primary. I would consider that possibly as secondary to an involvement primarily of the autonomic system. I think that is possible for demonstration. Dr. Schaller has well called attention to the necessity of a lot of future work, and it will take some very careful, painstaking research, particularly involving some finer staining methods for the vegetative nervous system. As to focal infection, one patient whom I showed had all of her teeth removed many years before and had received really a lot of careful medical attention, but that does not eliminate absolutely the possibility of focal infection. One cord specimen that I showed with marked, severe degeneration really deserves much attention along the lines which Dr. Diller mentioned the other day, giving the patient some particular attention. My sympathies were drawn toward this patient, because he had been treated for a long time for syphilis, which he absolutely denied. He went over the affair with me and said he did not object to telling me if he had ever had a lesion. Of course, that does not exclude syphilis. This man was incapacitated totally for one year, and he was not able to be out of the house. He held a clerical position and carried on his work successfully at his home through the aid of a stenographer until within two weeks of the time of his death. In view of the fact that the whole spinal cord was severely involved, I showed only a portion of it. It is rather interesting to note that this man could stick to his job as long as he did. I think he deserved a great deal of credit. Furthermore, that man belonged to the so-called neurotic type. He had been quite a hypertensive person all his life and had had some severe stresses many years previously.

CARDIO-ESOPHAGEAL RELAXATION*

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AND
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In our studies of the gastro-intestinal tract during the last three years, we have noticed under the fluoroscope a reflux of the barium meal from the stomach into the esophagus. As a result of this observation we have attempted to investigate this type of case with particular reference to its possible etiology and symptomatology. At first it was observed fluoroscopically only, with the patient in the prone position. In studying our old plates we have found some with the lower portion of the esophageal wall outlined with barium. Presumably we have missed or paid no attention to it heretofore. But since our attention has been called to it, we have found this condition in a larger percentage of cases, now 4.6 per cent, and have succeeded in demonstrating it on plates.

Roentgenologically, in normal cases the barium column is considerably narrowed at the epicardia, and there is a momentary delay in the passage of the liquid meal. In our own cases we have observed the lower one to three inches of the esophagus to be dilated. This dilatation was found to be of two distinct types, tubular and globular, the type probably depending on the degree of reflux, on its duration, or possibly on the gastric muscle tone or intragastric pressure. With the patient in the supine position, the barium meal passes freely to and fro between the stomach and the esophagus without belching, regurgitation or muscular contractions of the abdominal wall. We never observed the barium meal to fill out the entire esophagus, but it often fills its lower third. In certain cases this reflux can be best observed with the patient in the right oblique or dorsal position during deep inspirations. The lower portion of the esophagus is dilated, the cardio-esophageal orifice is open, and the barium mixture flows readily into the stomach without the normal momentary hesitation. In patients with weak abdominal walls, we succeeded in filling the lower end of the esophagus by means of gentle pressure over the stomach with the patient in the erect position.

The open cardio-esophageal orifice and the to and fro passage of barium meal can, in our opinion, occur only if the muscles governing this opening are relaxed. Therefore, we termed this condition cardio-esophageal relaxation.

Our clinical investigations have included a careful analysis of the case history, a thorough physical examination, and chemical and functional studies. However, our earlier cases and a few of the later ones have escaped functional gastric studies. In cardio-esophageal relaxation, when passing a stomach tube and using the expression method in obtaining stomach contents, we have observed that some of the contents escaped around the tube. Lately we have been using the duodenal tube almost exclusively, and we have therefore been unable to make any further observations along these lines.

The condition occurs more commonly in females, in our series in a proportion of 3 to 1. The ages of our patients were from 21 to 80, with patients of middle age predominating. We have never observed it in children. However, our practice among children is limited. The most frequent symptom was fulness and distress in the epigastrium, and a lumpy sensation under the lower portion of the sternum. These symptoms were present in 90 per cent of our cases. Belching is not a frequent symptom, especially in view of the frequency of this symptom in all kinds of digestive disturbances. We had four cases with a history of regurgitation, and all were associated with duodenal ulcer. Nausea and vomiting are very rare symptoms, and whenever found in our series, they could be explained by the presence of gross pathologic changes, as in some of our cancer and gallbladder cases. Pain due to cardio-esophageal relaxation was not present in any case. Heartburn, globus hystericus and dysphagia were studied especially. We were rather impressed by the absence of these symptoms. Heartburn is thought by some writers to be caused by acid stomach contents escaping into the esophagus. In all our cases, we have found eight patients who complained of this symptom. Of these patients, three had duodenal ulcers, two had cholecystitis, one chronic appendicitis, one had no demonstrable digestive abnormality, and one was a case of hyperacidity. Excluding the six cases in which the heartburn can be accounted for by other disease present, we have two patients out of ninety-seven who had heartburn. We are stressing this point, since in our opinion it disproves the theory of the causation of

* Because of lack of space, several illustrations have been omitted. The complete article will appear in the Transactions of the Section and in the authors' reprints.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

heartburn. We were rather hopeful of obtaining a working theory for the symptom of globus hystericus, as we thought this symptom might be caused by the reflux of stomach contents into the esophagus. However, none of our patients volunteered this information, and on questioning them about this sensation, we received an overwhelmingly negative reply. There was

Fig. 2.—Cardio-esophageal relaxation: The lower portion of the esophagus is ballooned out; globular type.

no dysphagia present in our cases of cardio-esophageal relaxation, except in those associated with obstructive lesions of the esophagus. A large majority, about 90 per cent, complained of fulness in the epigastrium, and a smaller percentage of fulness and discomfort in the lower thorax; but there were no disturbances of deglutition.

The physical examination of the 103 patients having cardio-esophageal relaxation disclosed a great variety of pathologic changes. We must emphasize the fact that all our patients were seeking medical advice and were willing to submit to the discomfort and expense of a thorough investigation, including roentgen-ray studies or even hospitalization. There were no experimental studies on presumably normal persons.

From the clinical point of view we must divide our cases into three groups:

1. Those with demonstrable gross pathologic changes in the gastro-intestinal tract.
2. Those with pathologic changes outside the gastro-intestinal tract.
3. Those with no demonstrable pathologic changes having functional disturbances.

The first group is by far the largest and includes fifty-nine cases. In this group we found a great variety of lesions, the most frequent of them being gallbladder disturbances, either cholecystitis or cholelithiasis. Definite signs of gallbladder disease were found in twenty-six cases in our group. However, we cannot accept cardio-esophageal relaxation as a sign of gallbladder disease. Next in frequency were duodenal ulcers, eight in number; then seven cases of carcinoma of the stomach. Chronic appendicitis was found in six cases, visceroptosis and atony in six cases, and megacolon with redundance, mucous colitis, and small diaphragmatic hernia in one case each. Of especial interest were the cases presenting gross pathologic changes of the esophagus. We found three cases of carcinoma of the esophagus (the middle third approximately).

The second group of cases, twenty-nine in all, consists of those with pathologic changes outside the digestive tract. Here senile changes, arteriosclerosis, angina pectoris, chronic nephritis, and cardiorenal disease predominated. These cases as a group showed a low gastric secretion and poor tone, with diminished peristalsis of the stomach. We had four cases of pernicious anemia with complete achylia. One patient had typical tabetic crisis with a positive Wassermann reaction of the spinal fluid. Several of our patients had chronic endocarditis, and two had pulmonary tuberculosis.

In the third group are fifteen cases without demonstrable organic changes. These are probably the pure cases of cardio-esophageal relaxation. These cases were studied with particular care and effort. Of these, eleven were women and four men. Their ages varied from 34 to 66. All had an unstable nervous system, and were what is generally spoken of as neurotics. This group of patients as a whole were undernourished, high strung persons. Three women were just passing through the menopause. All of them complained of pressure, distress, or lump in the epigastrium. One man had heartburn coming on about fifteen minutes after meals and relieved by soda. In this case, the gastric contents showed an anacidity. In general, this group was characterized by low acidity of the stomach contents; one woman had an achylia, but two patients had hyperacidity without heartburn. The roentgen-ray examina-

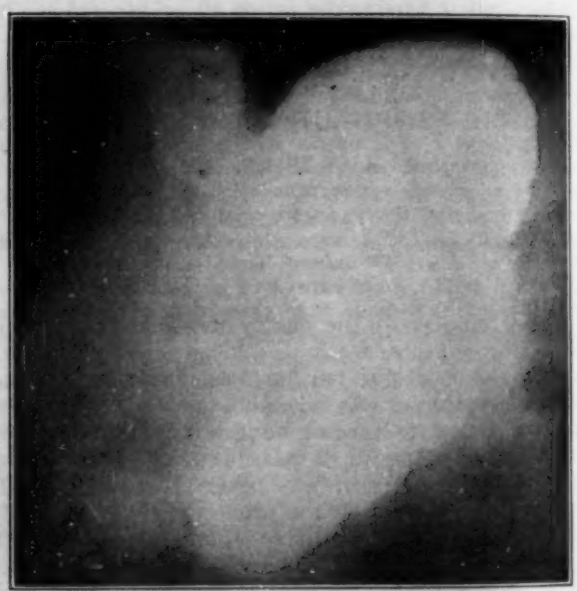

Fig. 3.—Cardio-esophageal relaxation: tubular type.

tion of this group showed hypertonicity of the stomach, with a moderate degree of pylorospasm. The peristaltic waves varied from time to time. No reverse peristalsis was observed. The two cases of anacidity showed an atonic stomach with a gaping pylorus and large duodenal caps. On the fifteen patients of this group, we studied the effect of physostigmine salicylate, epinephrine and atropine. We found that under physiologic doses of physostigmine salicylate, the cardio-esophageal relaxa-

tion showed a tendency to diminish, and in four cases there was no reflux of barium into the esophagus on a subsequent examination. Epinephrine, as far as we could observe, had no effect whether given by mouth or subcutaneously. Atropine had a tendency to increase the cardio-esophageal relaxation. In several cases, on a reexamination of the stomach under the influence of

Fig. 4.—Cardio-esophageal relaxation: dilatation of lower part of esophagus.

atropine, we found a reflux of barium into the esophagus where none was found on the first examination. We did not include these in our series. With the administration of physostigmine salicylate in medicinal doses of about 1/60 grain (1 mg.), the majority of our patients with pure piece fraction cardio-esophageal relaxations were relieved of their annoying symptoms.

As disclosed by our studies, cardio-esophageal relaxation can be recognized only roentgenologically. Here several conditions involving the esophagus and cardiac end of the stomach must be differentiated. This condition can be confused with cardiospasm unless the patient is studied under the fluoroscope, so that we can observe the ease with which the barium passes into the stomach. Early carcinoma of the esophagus can be ruled out by the irregularity and deformity of the esophageal outline. In three of our cases both conditions were present. A low diverticulum of esophagus gives a unilateral enlargement of outline without a flow of barium from the stomach into the esophagus. In diaphragmatic hernia, barium can be seen above the diaphragm, but this may be away from the esophageal opening and is continuous with the stomach outline.

TECHNIC

The ordinary barium meal is used, consisting of 4 ounces (125 Gm.) of barium sulphate in 12 ounces (350 cc.) of buttermilk. The patients are instructed to drink slowly. The esophagus is studied under the fluoroscope with the patient in the vertical right oblique position while drinking the barium mixture. Then the routine examination of the stomach is made. Later the stomach is studied in the prone, supine and oblique positions. The cardio-esophageal region is closely studied, and the patient is directed to take a deep breath, which often facilitates the observation. Roentgenograms are taken in the position in which the reflux was best observed under the fluoroscope.

And now let us attempt an explanation of the phenomenon of cardio-esophageal relaxation. We have two theories to offer, either of which may explain the reflux of barium into the esophagus. First: There is increased intragastric pressure, the result of hyperperistalsis or hypertonicity, on a liquid medium in the stomach, producing equal pressure on all sides of the organ, including both openings of the organ. Under these circumstances the weaker sphincter will give way, with a resulting reflux of the liquid into the esophagus to a height at which the weight of the column will balance or overcome the pressure from within. When the tension is relieved, the fluid propelled by the esophageal peristalsis and aided by its weight will again escape into the stomach. Confirming this theory is the presence, in a large percentage of our cases, of pylorospasm and hypertonicity of the stomach.

The second theory is based on the action of the sympathetic nervous system. Hunter says:

> The sympathetic acts continuously to impose a posture on an involuntary muscle, the object of which is to retain material in the viscus for a purpose. This is accomplished by a tonic contraction below and active dilatation of the visceral wall above. The function of the parasympathetic, which acts intermittently, is to empty the viscus. The two nerve systems are complementary and not balanced, and are in keeping with the general plan of double innervation common to the body.

Fig. 5.—Cardio-esophageal relaxation with an intermittent spasm of the cardia.

Is cardio-esophageal relaxation a result of disturbed balance in the sympathetic nervous system? Our reply is that it may be. The effects of drugs, as studied by us, points in that direction.

We are not able at this time to say which is the more plausible theory; whether both play a part in various cases, or whether some other explanation may not be found.

CONCLUSIONS

1. One hundred and three cases of cardio-esophageal relaxation were studied.
2. Cardio-esophageal relaxation is not a clinical entity, but is found in a great variety of pathologic cases or without any demonstrable lesions.
3. Cardio-esophageal relaxation must be differentiated from other lesions in or about the lower esophagus, such as hernia, pouch or cardiospasm.
4. Heartburn is not caused by stomach contents escaping into the lower esophagus.
5. A definite diagnosis of cardio-esophageal relaxation can be made only by means of the roentgen rays.

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ABSTRACT OF DISCUSSION

DR. FRANK SMITHIES, Chicago: This paper returns a certain amount of needed, negative evidence. Every one of us has patients who come with a batch of roentgenograms similar to those shown, and on these it has been presumed that cardiospasm, some deficiency in the esophagus or a lesion about the cardia exists. The patient is not a little upset by having been told there is something seriously wrong with his swallowing apparatus. Thus, I think this paper should have discussion, from the standpoint of possible errors from roentgenographic study alone. As the authors have shown, when all facts are available the condition is easily differentiated from true cardiospasm. I wish to emphasize the difference between "spasm at the cardia" and "cardiospasm." Spasm at the cardia is a transient affair due to many causes. Cardiospasm is always accompanied by diffuse dilatation of the esophagus along anatomic lines and with some degree of real retention in the esophagus. It is not a neurosis and does not yield to simple antispasmodic medicines or to psychotherapy. Often, I have observed plates such as have been presented and, on the basis of them, the diagnosis of high lying ulcer, liver pressure, cancer, etc., has been made. This paper further shows that many persons who have normal alimentary functions show esophageal regurgitation. I observed from the slides that in most of the cases the pylorus was closed, and it occurred to me that in many of these instances the regurgitation simply represented an incomplete vomiting reflex caused by the ingestion of a distasteful barium meal. At fluroscopic examination such phenomena are often exhibited. This vomiting reflex is initiated by closure of the pylorus, frequently very prolonged and out of normal rhythm. Following this, there is regurgitation of all or part of the meal into the esophagus. Apparently, when the pylorus closes there is a compensatory relaxation of the cardiac sphincter. I am surprised at the lack of history of so-called heartburn in these patients. It appears to me that when there is pronounced esophageal regurgitation of a food meal, there is a history of heartburn. However, in many nervous patients it is quite likely that the lower esophagus, which is not accustomed to tolerate acid regurgitation without discomfort, becomes accustomed to it and does not respond by heartburn.

DR. GEORGE B. EUSTERMAN, Rochester, Minn.: Some years ago LeWald called our attention to the fact that chronic cases of syphilitic hourglass stomach are often associated with a dilatation of the lower esophagus. This dilatation, as a rule, is not seen in patients with hour-glass stomach due to carcinoma or benign ulcer. Such dilatation is a permanent one and is probably nature's way of compensating for the marked contraction and diminution in the capacity of the organ under such circumstances. Dr. Smithies' observation on the physiologic explanation of heartburn, as championed by Hurst and other investigators, is worthy of comment. Recently, physiologists have disputed the fact that the mechanism of heartburn is the result of gastric regurgitation into the lower esophagus. This may explain why there has been an absence of characteristic heartburn, to which the author called attention. It is also possible, of course, that the amount of barium sulphate in the stomach might have been a factor. The paper is one of interest to me because of the frequency with which permanent dilatation of the lower esophagus occurred in a large number of the cases of gastric syphilis which I have had the opportunity to see and study.

DR. I. R. JANKELSON, Boston: In reply to Dr. Smithies, we were rather surprised in the beginning of our investigation to see what little heartburn we got. We had only a very small proportion, not more than 2 per cent that complained of heartburn. Perhaps others may find a different figure. I think that Dr. Eusterman's point is well taken. The amount of barium taken at the time of feeding may have prevented heartburn. In regard to regurgitation in syphilis, I know it has been recorded, but in our series we had one case of syphilis in the stomach, and that did not show any reflex, so it is 100 per cent failure in one case.

ACANTHOSIS NIGRICANS: JUVENILE TYPE*

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Since the original communications by Pollitzer [1] and Janovsky [2] concerning acanthosis nigricans, reports of about ninety-five authentic cases have been collected from various sources, these embodying two types of the disease. One, the larger group, has shown a striking association with malignant disease, chiefly of the abdominal viscera; and because of this, together with the unfavorable prognosis for life in this class of cases, it has been termed the malignant type of the disease. The smaller group includes those cases in which there is neither evidence of malignant change nor marked impairment of the general health. This is known as the benign type; and although it may occur in older persons, it usually is found in the first two decades of life.

As early as 1893, Hallopeau [3] called attention to the association with malignant disease, and suggested an analogy between the cutaneous changes and the coincident neoplastic changes in the abdominal viscera. Two years later Darier,[4] reporting his third case in association with gastric carcinoma, suggested two theories of causation of the cutaneous picture, the first that of autointoxication and the second the more tenable one of direct action of a mechanical mass on the abdominal sympathetic system or its allied glands. The latter theory is the more widely accepted of the two, the benign type being accounted for by Pollitzer [5] by the possible presence of fibrous bands, adhesions, congenital malformations, benign tumors, etc., which interfere with the function of the sympathetic system only up to a certain point, thereby producing changes which, instead of progressing as in the malignant form of the disease, tend to remain fixed for unlimited periods.

Porias [6] advances the possibility of an internal secretion regulating the papillary growth of the skin anal-

* Studies and Contributions of the Department of Dermatology and Syphilology of the University of Michigan Medical School, Service of Dr. Udo J. Wile.

* Read before the Section on Dermatology and Syphilology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Pollitzer: International Atlas of Rare Skin Diseases, plate X, 1890.
2. Janovsky: International Atlas of Rare Skin Diseases, plate XI, 1890.
3. Hallopeau, Jeanselme and Meslay: Ann. de dermat. et syph. 4: 876, 1893.
4. Darier: Ann. de dermat. et syph., 1895, p. 97.
5. Pollitzer, Sigmund: Acanthosis Nigricans, J. A. M. A. 53: 1369 (Oct. 23) 1909.
6. Porias: Wien. klin. Rundschau 38: 671, 1913.

ogous to the pigmentary regulation by the suprarenals, and believes that this process is intimately associated with the function of the chromaffin system. In addition to these factors, malignant changes in organs other than the abdominal viscera, extremes of heat,[2] cold,[7] alcoholism by several observers, menstrual disturbances,[8] injury to the epigastrium,[9] decapsulation of the kidneys,[10] hepatic cyrrhosis[7] and syphilis[11] have all been cited as the etiologic agents or apparent contributing factors in the cases in which they have been noted.

These varied factors lend probability to the supposition of Porias[6] that all cases have a common causation, individual cases varying only by the manner in which the causative factor, a disturbance of internal secretion, is activated. Until more accurate data concerning the mode of activation is forthcoming, preferably through careful necropsies of the cases in which there is no demonstrable malignant condition as suggested by Pollitzer,[5] it must be assumed that the disturbance may be brought about by either mechanical or biochemical changes. The cases presenting neoplasms in regions isolated from the abdominal sympathetic system could be more easily accounted for by the latter supposition, whereas already a sufficient number of cases presenting growths in the immediate vicinity of these fibers have been noted to give support to the mechanical theory.

It is only by the acceptance of some such view that we can reconcile our clinical knowledge of this disease with our limited conception of the physiology and pathology of pigment production and regulation, as well as of the factors governing normal growth of the skin.

It is my purpose in this paper to present an additional case of the juvenile type in which studies were made in an attempt to establish some relation between the clinical observations and the disturbance of internal glandular secretions as determined by laboratory and clinical methods. I use the term "juvenile" here as indicating patients under 20 years of age and presenting no evidence of malignant disease, in whom the general health is unimpaired, the disease either progresses slowly or remains stationary, and death has not occurred.

Up to the present time some eleven cases of juvenile acanthosis nigricans have been reported, in addition to the case of Dr. Heidingsfield as mentioned by Frick.[12] The onset of the disease in these varied from early infancy in Filser's[13] case to the age of 14 years in the case described by Neumann,[14] and in none of these cases has a definite etiology been determined. White's[15] patient is described as showing improvement under the administration of thyroid extract, and in Roblee's[16] case improvement followed the same therapy in addition to removal to a warm climate. In Heidingsfield's case the disease disappeared entirely ten years after its onset, which lessens the likelihood of its being a case of true acanthosis nigricans. In the remainder the condition either progressed slowly or remained stationary, sometimes for long periods of time, as in Cavagnis'[17] case, in which the cutaneous changes began at the age of 3 and had remained unchanged from the eighth to the thirty-first years of the patient's life.

The rarity of this type of case and the obscurity concerning its etiology warrant additional case reports and further investigation into the mechanism of its causation, especially from the point of view of its direct relation to disturbance of the glands of internal secretion.

REPORT OF CASE

L. S., a schoolgirl, aged 10 years, was brought to the University Hospital by her mother, May 31, 1922, because of pigmentary changes in the skin associated with localized "roughness." The family history revealed no cases of cancer or tuberculosis, with the possible exception of the maternal grandmother, who was alleged to have died from cancer of the stomach with associated "dropsy." The mother stated that she had been told that she had nephritis previous to the birth of the patient, with considerable diminution of urine and some edema of the lower extremities.

Fig. 1.—Distribution of pigment and associated thickening.

The patient was born at full term and apparently developed normally up to the time of the onset of her cutaneous disorder. During early childhood she had chicken pox, measles and scarlet fever, with no apparent sequelae. Eighteen months previous to the patient's entrance to the hospital, the mother noted that the skin of the patient's neck was becoming darker. This had gradually increased up to the time of entrance and had in the meantime attracted itself to the mother's attention about the waistline, axillae and groins, presenting unevenness of the skin surface and thickening in these regions in a marked degree. This condition had been neither preceded by nor, after its full development, associated with any subjective symptoms or changes in sensation.

The patient was fairly well nourished, was of fair general physical appearance, and did not appear ill. Examination of the chest revealed a soft systolic murmur with a slightly accentuated pulmonic second sound. No evidence of pulmonary disease was found. The abdomen presented no masses, areas of tenderness, or other abnormalities. The spleen and liver were not palpable. The entire cutaneous envelop presented a definite hyperpigmentation, which was most marked about the neck, in the axillae, over the abdomen, about the umbilicus,

7. Crocker: Diseases of the Skin, 1908, p. 597.
8. Spietschka: Arch. f. Dermat. u. Syph. **44**: 247, 1898.
9. Pawlow: Russ. Ztg. f. Dermat. u. ven. Krankh. **1**, no. 8.
10. Wise, F.: J. Cutan. Dis. **36**: 35 (Jan.) 1918.
11. Caussade, G.; Lévy-Franckel, A., and Juster: Bull. et mem. Soc. méd. d. hôp. de Paris **46**: 1363 (Oct. 20) 1922.
12. Frick: New York M. J. **2**: 232, 1915.
13. Filser: Monatschr. f. Dermat., abstr. **47**: 112, 1908.
14. Neumann: Arch. f. Dermat. u. Syph. **34**, 1896.
15. White: J. Cutan. Dis. **30**: 179, 1912.
16. Roblee: J. Cutan. Dis. **7**: 306, 1908.
17. Cavagnis: Gior. ital. d. mal. ven. **46**: 373, 1912.

in the genitocrural regions, and in the popliteal spaces. This was noted to be so marked as to warrant the term negroid in describing the latter regions. There was noted in all the regions of greatest pigmentation an associated papillary hypertrophy, giving the skin a rough appearance which in spite of its uneven surface had a definitely velvety consistency to the touch. There was no associated desquamation. A clinical diagnosis of acanthosis nigricans was made.

Fig. 2.—Axillary fold, showing marked irregularity produced by acanthotic change.

The blood pressure averaged from 105 to 110 systolic and 70 diastolic. Blood examination revealed 80 per cent hemoglobin, 4,350,000 red cells, and 11,500 white cells, with no striking changes in the differential count. Repeated urine examinations were negative except for small amounts of albumin on several occasions in uncatheterized specimens. No casts were found. The blood sugar in a fourteen hour fasting specimen presented 0.092 per cent of sugar by the Folin method and 0.105 by the Lewis-Benedict method. No treatment was attempted, and observation was advised.

The patient was not seen again until June 30, 1925, at which time she entered the hospital for further study. The interval history showed that the patient believed the skin changes to have grown slightly more marked, especially about the genitalia. She had noted no change in her general health except that she did not think she had gained weight during the past year, at the beginning of which the menstrual function had commenced. Although this had been quite regular, occurring every twenty-eight days and lasting five or six days, the period previous to her entrance had been missed, and no menstruation occurred during the patient's stay in the hospital. There was a history of slight pain referred to the left lower quadrant during the menses.

Reexamination at the age of 13 showed that the patient retained her good nutrition. She was apparently normally developed, and presented an almost universal cutaneous change, in which hyperpigmentation was the most salient characteristic. Although generalized, this was especially marked in the flexures and in the areas of greatest warmth and moisture. The areas most markedly involved were the neck, axillae, folds of the breasts, genitocrural regions, perianal region, intergluteal crease, umbilical region, lids, angles of the mouth, flexors of the elbows, popliteal spaces, folds of the nates, dorsa of the hands and feet and inner surfaces of the thighs, approximately in the order named. The oral mucosae and that of the nymphae and vagina presented no definite pigmentation.

The degree of pigmentation varied between a shade simulating that of the average brunette skin to a dark chocolate brown. In all the regions named, and extending to a lesser degree on the surrounding skin, there was found a thickening of the skin characterized by marked accentuation of the normal lines and furrows apparently by virtue of an hypertrophic epidermal change. This hypertrophic change, best shown in the neck, axillae and genitocrural regions, produced numerous deep furrows with uneven, irregular ridges between, which were replaced by innumerable rhomboidal plateaus of diminishing size as the areas of greatest movement of the skin were left behind. This change was apparent in some degree over the greatest part of the body, and in general was definitely associated with the hyperpigmentation, being most marked where the skin was darkest. Contrary to the first general impression on looking at these uneven surfaces, on palpation even the most irregular portions were entirely soft to the touch, revealing a consistency much like that of thick, soft corduroy.

The skin of the face presented in addition to the diffuse pigmentary change numerous pin-point to lentil sized discrete and confluent highly pigmented macules. On the inner surfaces of the thighs were occasional glass pin-head sized cellular nevi. The labia minora, although devoid of unusual pigment, were redundant and showed evidence of papillary hypertrophy. The palms and soles were slightly thickened and appeared somewhat darker than normal. There was slight generalized thinning of the hair, which was rather coarse in texture. There were no visible lesions of the nails. An ophthalmoscopic examination revealed no hyperpigmentation of the structures of the eyes.

Clinical examination of the thorax at this time revealed no pathologic change. Roentgenograms showed slight accentuation of the hilum and bronchovascular tree shadows in consideration of the patient's age but were not thought of especial significance. Clinical examination of the abdomen and pelvic examination under ether were fruitless except that the right ovary was found to be slightly enlarged. The hymen was intact. The uterus was not enlarged.

An average bean-sized, firm, discrete, painless enlargement of the inguinal lymph glands was noted. The thyroid gland presented no enlargement. Roentgen-ray examination of the skull showed the sella to be normal, and revealed no pathologic change in the other structures. The rest of the osseous

Fig. 3.—Accentuation of normal lines and furrows in neck; also high degree of associated pigmentation here.

system was apparently normal. A neurologic examination was entirely negative, both for reflex changes and for changes in sensation.

Fluoroscopic examination of the gastro-intestinal tract revealed no pathologic change other than smallness of the bulb and irregularity, which was thought suggestive of pressure but was so slight as to warrant no diagnosis of organic change. Repeated urine examinations and blood count showed no essen-

tial alteration since the first examination other than an increase in the hemoglobin content of the blood.

Three pieces of skin were removed for microscopic study. These were taken from (1) the apparently least markedly involved skin, that over the lateral surface of the thigh; (2) from an area of moderate pigmentation and hypertrophy, over the abdomen adjacent to the umbilicus, and (3) from the markedly involved portion of the axillary fold. These revealed three stages in the pigmentary and acanthotic processes with other less constant minor changes.

The first section showed the surface of the epidermis to be slightly wavy in outline. The stratum corneum presented only a mild increase in thickness, and the granular layer showed no definite change. The malpighian layer varied in thickness from five to twenty-five cell layers, with increased width of the rete pegs and slight clubbing of their apexes. A slight increase in amount of pigment granules was found in the basal layer, but this did not extend into the prickle cell layer or into the corium. The corium showed slight edema and round cell infiltration about the vessels and lymphatics.

Fig. 4.—Acanthotic change about the lids and angles of the mouth.

The section from the skin of the abdomen showed the surface of the epidermis presenting marked folds with changes in the stratum corneum and stratum granulosum approximating those found in the first section. The prickle cell layer presented marked hypertrophy with associated edema. There was increase in the length of the rete pegs and there were many pigment-containing cells in this layer. The basal layer presented a most marked pigment content, the pigment filling the perinuclear portion of the cells as well as the peripheral zones. The corium presented rather marked edema with numerous chromatophores scattered throughout and considerable extracellular pigment. There was no marked infiltrate noted here, and only an occasional mast cell was found. The corium showed a definite increase in density of the collagenous fibers.

The axillary specimen, taken from one of the most prominent ridges at the apex of the axilla, presented most marked changes. The surface of the epidermis presented alternate deep crypts and acuminate elevations, the crypts being filled with epithelial débris. The stratum corneum presented more marked thickening than in the previously described sections, and there was some localized increased thickness of the granular layer. The prickle cell layer, while greatly thickened, was not sufficiently so to account for the greatly exaggerated folds into which it was thrown, and it must be assumed that this was, at least in part, due to the normal topography of the skin of the region, the normal folds being merely accentuated by the gross thickening of this particular layer. There was marked pigmentation of the cells of this layer, most marked at the base but extending well up toward the granular layer. Pyknotic nuclei suggesting mitosis were seen and there was moderate edema of this layer. The corium showed considerable edema with a slight yet definite perivascular infiltration of round cells and numerous pigment-bearing cells, with an occasional mast cell. In general, the histologic picture entirely accorded with the clinical observations.

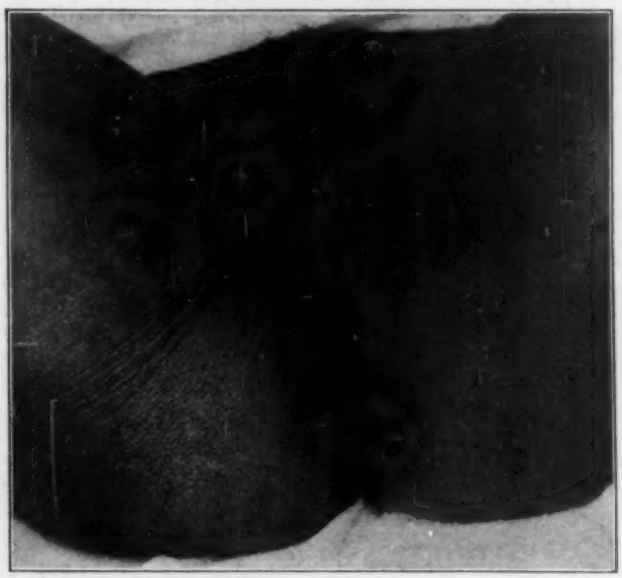

Fig. 5.—Marked involvement of genitocrural region, together with perianal and labial changes.

In view of the negative results on general physical examination, further laboratory procedures and functional tests of the activity of the glands of internal secretion were deemed advisable. Examination of the urine by the spectroscope revealed no abnormal pigments nor optically active substances. The blood showed a nonprotein nitrogen content of 26 mg. per hundred cubic centimeters, urea nitrogen 13.1 mg., and aminonitrogen 5 mg. The free phenols of the blood totaled 2.2 mg. by the Benedict[18] method, which, although slightly

Fig. 6.—Section from lateral surface of thigh showing relatively slight changes in this region.

18. Benedict, S. R.: J. Biol. Chem. **61**: 67 (Aug.) 1924.

above the upper limits of normal as determined by Theis and Benedict in an average of twenty-six subjects, were considered too slightly elevated to be of significance.

Examination of the gastric content following a test meal revealed a definite hypo-acidity. A glucose tolerance test was performed. The fasting specimen showed a blood sugar determination of 0.068 per cent, although some two weeks previously a similar test showed a sugar content of 0.092 per cent. After one-half hour the test showed the sugar content to be 0.077 per cent, after three-fourths hour, 0.106 per cent, and a final determination at the end of two hours

Fig. 7.—Low power view of skin of abdomen, showing marked acanthotic and pigmentary increase.

was 0.105 per cent. Although the initial low determination may be disregarded as deviating too slightly from the low normal to be of significance, the very low rise on the subsequent tests indicates a distinctly increased sugar tolerance.

The patient showed a markedly abnormal reaction to the injection of epinephrine, as shown by the Goetsch test, indicating instability of the sympathetic nervous system. At the beginning of the test the pulse was 74 and the blood pressure, systolic 122, and diastolic 78. Epinephrine, 0.5 cc., was injected, which was followed by a drop in the pulse rate to 60 a minute, and in the systolic and diastolic pressures of 4 and 8 points, respectively. At the end of five minutes both the systolic pressure and the pulse rate had commenced to rise. The diastolic pressure remained lowered and did not regain its first level until after a period of sixty-five minutes and did not rise above this throughout the entire test, lasting for one hour and forty-five minutes. The pulse rate did not reach its highest point for thirty minutes, at which time it was 90 a minute, where it remained for forty minutes and did not return to normal until the end of the test. The systolic pressure slowly rose after its initial fall to its high point of 140 mm., this taking place after the expiration of forty-five minutes. The base line for the systolic pressure was again reached only a few moments before the pulse rate returned to normal, completing the test.

This very prolonged action of the epinephrine was interpreted as indicating a definitely exaggerated response, probably as a result of impairment of the patient's own secretion of this or allied substances. A single determination of the basal metabolic rate showed this to be 6 per cent below normal with a pulse rate averaging 80 a minute. This was not repeated; but as initial determinations of this kind are practically always higher than subsequent tests, it is assumed that the patient's rate was probably at the low limits of normal, especially in view of her age and sex.

The hypo-acidity of the gastric content, the increased sugar tolerance, the prolonged reaction to epinephrine, the low metabolic and pulse rates, and the disturbance of the ovarian function were considered significant from several angles. Although the various glands of internal secretion are known to be interacting and their exact functions are still far from being accurately determined, yet certain clinical facts are known to us by which hitherto obscure processes may be at least partially worked out. By the application of some of these, an attempt is made to establish a definite functional impairment of the suprarenal glands with possible hypoactivity of other glands of the internally secreting system and, by virtue of their close association, of the abdominal sympathetic system.

Both clinically and radiologically the pituitary gland showed no evidence of dysfunction. Likewise there were no definite signs of abnormality of the thyroid gland, although several of the observations, it must be admitted, are entirely compatible with thyroid insufficiency. That there was probably some disturbance of the ovarian function is illustrated by the cessation of the menses. The association of hyperpigmentation with diminution in function of the suprarenals has long been recognized. Additional evidence in this case is shown by the increased sugar tolerance that is commonly found in suprarenal insufficiency. The hypo-acidity on gastric analysis, while a variable factor, is indirect evidence in that it points to a defective innervation, probably as a result of glandular impairment, this being more probable in the light of our inability to demonstrate any organic pathologic change. The basal metabolic rate and the persistently slow pulse, the age and sex of the patient being kept in mind, are entirely in accordance with hypofunction of the suprarenal glands. The Goetsch test is probably the most difficult of definite interpretation, but that it indicates a marked reaction to additional secretion not encountered in normal persons cannot be denied. Further definite clinical evidence was not forthcoming. The patient was somewhat lacking in normal interest in her surroundings and lost 9 pounds (4 Kg.) during her stay in the hospital; but this may be accounted for by the fact that she was extremely homesick much of the time.

Local treatment was attempted by rubbing small patches with 5 per cent sodium hydroxide solution daily. This produced some temporary diminution in pigmentation. Roentgen-ray therapy was instituted with the result that one erythema dose, while it produced some reduction of the papillary hypertrophy, caused a prompt and quite marked increase in pigmentation. Glandular therapy was given empirically before the examinations were completed in the form of thyroid

Fig. 8.—High power view of skin of abdomen, showing regional hyperkeratosis and distribution of pigment.

extract, one-half grain (0.03 Gm.), and pituitary extract, 1 grain (0.065 Gm.), twice daily, without appreciable effect. Arndt[19] recommends the use of roentgen-ray therapy, and Petrini[20] reports beneficial results from its use in acanthosis nigricans.

CONCLUSIONS

1. While many cases of acanthosis nigricans are undoubtedly directly due to the presence of tumors

19. Arndt: Dermat. Ztschr. **20**: 330, 1913.
20. Petrini: Bull. Soc. franç. de dermat. et syph. **20**: 114, 1909.

adjacent to the abdominal sympathetic system and suprarenal glands and directly associated with pressure on these structures, there are many, including the juvenile cases, that cannot be accounted for in this way.

2. In cases not otherwise explainable, the pigmentary change may find its explanation in hypofunction of the suprarenal glands.

3. In the case here described, striking features indicating hypofunction of the suprarenal glands were demonstrated.

Fig. 9.—Low power section of axilla, showing papillary hypertrophy of this region.

4. Juvenile or benign adult cases should be studied from this angle in an attempt to obtain more accurate data concerning their exact relation to suprarenal function.

I especially wish to call attention to the following quotation from Dr. Pollitzer: "Progress in our knowledge of this condition obviously depends on careful autopsy studies, whose importance both for general physiology and for the special pathology of the condition cannot be overemphasized."

ABSTRACT OF DISCUSSION

DR. FRED WISE, New York: Acanthosis nigricans is one of the diseases to which the term "obscure" may well be applied. Pollitzer and Janowsky independently described the condition at the same time, the two descriptions appearing in the same issue of the International Atlas of Rare Skin Diseases. Among the interesting features are its rarity and the remarkable diversity of its etiology. There is the benign type and the malignant type. The juvenile form is benign and sometimes regresses spontaneously. The malignant form is most frequently associated with neoplastic tumors in the abdomen. In the latter, the theory has been advanced that pressure over the abdominal sympathetic acts as an inciting factor in the production of the cutaneous changes. However, it would seem that intra-abdominal pressure alone is merely a contributing etiologic factor, for the disease is not associated with pregnancy or with benign tumors of the abdomen, which might interfere with the functioning of the abdominal sympathetic. In other words, as the author pointed out, there must be many other factors which play a rôle in the causation of the eruption. I had a case of the juvenile type under observation some years ago. The patient was a young woman, aged 24, who, after an unfortunate love affair, took mercuric chloride with suicidal intent, but did not die. The kidneys were decapsulated, and about three months later she presented some symptoms which were unusual. Her entire skin became red and "looked like a boiled lobster." She was very ill and was confined to bed. This condition persisted for several weeks, but under palliative treatment the skin became clear again and apparently returned to normal. A short time later the skin became pigmented, and had I not seen the face of the patient presented by Dr. Wieder on the screen I would have thought that it was the same patient. The appearance of the skin was identical. My patient was hysterical and mentally unbalanced, and refused physical examination and biopsy. The cutaneous condition was typical in every way, but we were unable to study the patient or to carry out the work along the lines Dr. Wieder has presented. There is very little doubt that there had been a disturbance of the internal organs, following the operation on the kidneys.

DR. UDO J. WILE, Ann Arbor, Mich.: I am inclined to believe that there is very little difference between the so-called benign and malignant types of acanthosis nigricans. The work of Dr. Wieder suggests that a difference does not exist. Clinically, the cases may be identical. I believe that there is nothing in the malignant condition itself which contributes to the acanthosis or to the pigment. The reason we do not see acanthosis in the benign abdominal tumors and in pregnancy is that the conditions are terminating either normally or by operation before extensive injury and permanent chromogenic changes take place. The apparent common factor in cases of the juvenile and malignant type is some injury to the autonomic nervous system, an indirect effect on the glands of internal secretion, particularly the suprarenal.

DR. L. M. WIEDER, Ann Arbor, Mich.: I mentioned Dr. Pollitzer as first completely describing acanthosis nigricans, because only his report contained a histologic study as well as the clinical data. The cases described by Pollitzer and Janowsky were different cases. Dr. Pollitzer had advanced such causative agents in the juvenile and benign cases as adhesions or fibrous bands which produce a change only up to a certain point. I believe that very few benign cases have been described as spontaneously involuting. Concerning treatment in this case, before the functional tests were carried

Fig. 10.—High power view of axillary section, showing cellular infiltration of corium at apex of papilla.

out, the patient was empirically treated with thyroid and pituitary extract. Under this treatment no change occurred. Roentgen-ray therapy produced some flattening of the papillary hypertrophy, but a prompt and disproportionate increase in pigmentation, for which reason the treatment was immediately stopped. Concerning Dr. Pollitzer's advice as to the desirability of necropsy in these cases, it might be said here that some twelve cases of acanthosis nigricans have been examined post mortem, and of these eleven showed evidence of malignant disease.

BREAST FEEDING PROBLEMS: I. MATERNAL *

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AND
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The mental hazards of motherhood are multitudinous. Left to her own instincts and inherited intuitions, a mother naturally wishes to nurse her baby. Too often, however, the statements of well intentioned friends and the literature that comes to hand raise the question in her mind as to the possibility or advisability of doing so.

When a mother has decided that she will nurse her baby, many problems of personal hygiene and nutrition arise. A proper balance between exercise, rest and caloric intake is so essential to successful nursing that physicians need to advise a mother on these points in considerable detail. Nine hours of sleep and a mile walk daily in the open air, lightly clothed, are essentials.

If we can interpret the nutritional requirements of lactating rats as paralleling those of human beings, the diet must be not only calorically adequate but include ample vitamins, minerals and certain amino-acids, such as cystine, tyrosine and tryptophan. For practical purposes these amino-acids are assured if the daily menu contains half a cup of succulent vegetables, 2 ounces (60 Gm.) of meat, and a serving of cottage cheese, milk or buttermilk. A properly varied diet is invaluable. Barnett Sure[1] has recently shown that the required amount of water-soluble B vitamin is much greater for normal mammary gland secretion than for growth. A milk diet during pregnancy and lactation has, in our rat experiments, proved decidedly inadequate.

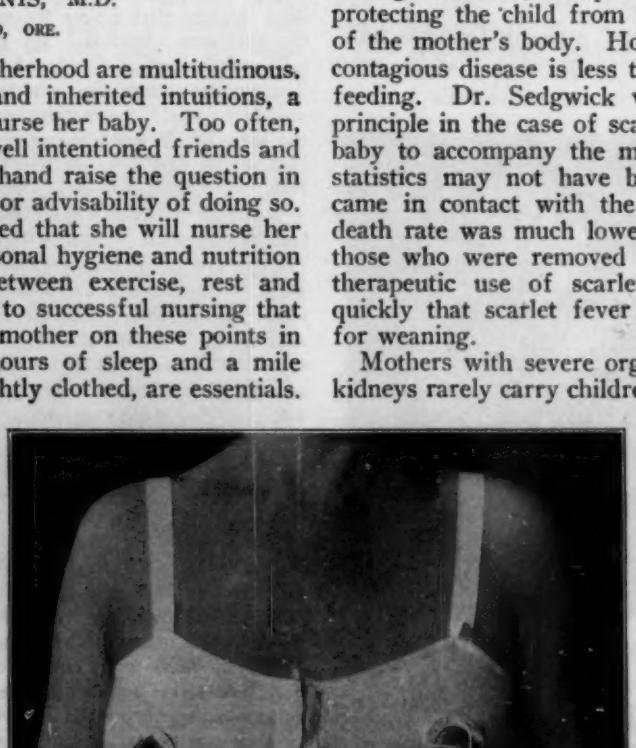

Fig. 1.—Nipple aerators sewed into the brassière prevent and cure inflammatory nipple troubles by evaginating the nipple and permitting application of the open-air method of treatment. (Manufactured by Becton Dickenson Company.)

CONSTITUTIONAL CONDITIONS

Breast feeding problems occasionally arise from abnormalities during labor or the puerperium. In cases of cesarean section, severe hemorrhage or prolonged and exhausting labor, the delay in the appearance of the milk supply may necessitate the use of artificial food for a few days. Extreme toxicity, as in eclampsia, may temporarily render the mother's milk unfit for the child. Once the bottle is begun, the path of least resistance is to continue its use; but the conscientious physician will spare no effort to establish a flow of milk at the earliest possible date. If a child is taken off the breast even for a few days, the secretory function must be kept active by manual expression.

In certain instances of grave constitutional disease, it may be necessary to relieve the mother temporarily of the added burden which nursing entails. As soon as her condition permits, breast feeding should be fully reestablished. Since infections are not transmissible through the milk, it is possible to prevent contagion by protecting the child from the exudates and excretions of the mother's body. However, the danger from the contagious disease is less than that arising from bottle feeding. Dr. Sedgwick was the first to apply this principle in the case of scarlet fever by permitting the baby to accompany the mother to the hospital. The statistics may not have been published, but all who came in contact with the experiment recall that the death rate was much lower in such cases than among those who were removed from the breast. Now the therapeutic use of scarlet fever antitoxin cures so quickly that scarlet fever is eliminated as an excuse for weaning.

Mothers with severe organic disease of the heart or kidneys rarely carry children to term, and hence seldom have to face the problem of breast feeding. The mere presence of a heart murmur or of albumin in the urine is certainly not an indication for weaning. In general, it should be remembered that a woman strong enough to care for her child is strong enough to nurse it.

Insanity and epilepsy in the mother are usually considered contraindications to nursing. These conditions certainly cannot influence the quality of the milk, but if the character of the disease is such that the mother might injure her child, it may be necessary to supervise the nursing or even wean the baby.

The only absolute indication for prohibiting nursing is open tuberculosis in the mother. In this condition it would obviously be detrimental to the best interests of both the mother and the child to permit breast feeding. If, however, the tuberculous process is healed, nursing under proper medical supervision should be encouraged.

MAMMARY GLAND PROBLEMS

Breast feeding problems may arise from local conditions in the mammary gland itself, a fact often overlooked by both the obstetrician and the pediatrician. The routine examination of every mother's breast should include inspection, palpation and milk expression. One can thus diagnose and frequently forestall trouble which, if neglected, results in premature weaning. By inspection, the shape of the nipple and the presence or absence of fissures or abrasions are noted. By palpation, one determines whether or not the muscle of the nipple is hypertrophied. By milk expression, the degree of tenderness in the breast and the tone of the circular nipple muscles are estimated. Women with hypertonic or hypertrophic musculature are "hard

* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Sure, Barnett: Amino-Acids in Nutrition: VII. Nutritive Inadequacies in Protein of the Georgia Velvet Bean, J. Metab. Research 3: 383 (March) 1923.

milkers." In such cases even a strong new-born infant is unable to exert sufficient suction to overcome the resistance of the muscles. As a result, there is a decrease in the quantity of milk secreted, and the baby, weakened by starvation, becomes less and less able to obtain adequate nourishment. The vicious circle thus started must be broken by manual expression if breast feeding is to be a success. Abt's electric breast pump is of great value but is rarely accessible except in hospitals.

The problem presented by hypertrophied nipples is well illustrated in the following case: Baby M., though a well developed, full-term infant, weighed only 6¾ pounds (3,160 Gm.) when admitted to our clinic at the age of 2 months. If permitted, he would nurse as long as one and one-fourth hours. Careful weighing showed that he obtained only 50 Gm. from the two breasts at a single feeding, although considerable milk still remained in them. In searching for the cause of this condition, the nipples were found to be tender and slightly fissured, probably as a result of the mother's repeated applications of boric acid solution and prolonged nursings every two hours. The circular muscle of the nipple was so hypertrophic and its spasticity so great that milk could be obtained from the breast only with difficulty, as shown by the expression test. A cure of the nipple condition by methods later outlined and by regular manual expression so decreased both the hypertonicity and the hypertrophy of these muscles that the baby was soon able to obtain his food with a normal amount of effort. The breast milk doubled in quantity in two weeks' time, and the baby began gaining properly.

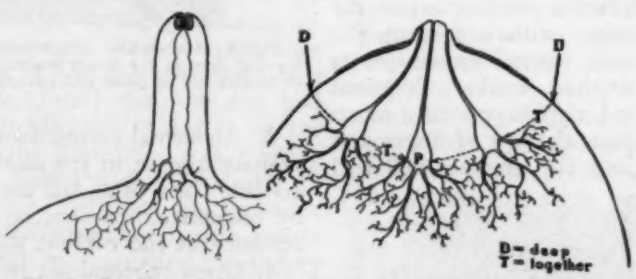

Fig. 2.—Structure of the cow's udder (left) compared with the human breast (right), showing reasons for the "deep" and "together" motions used in milk expression, in contradistinction to the stripping motion used in the dairy.

Blonde women and other thin-skinned types frequently have tender nipples, and to such women nursing may be a very painful process. Many mothers will heroically endure debilitating pain without complaint, believing it to be a part of the price of motherhood, and, for fear of having the baby put on the bottle, will refrain from mentioning it to their physicians unless the nipple is examined. Some women render their nipples tender by washing them before and after nursing with boric acid solution or other antiseptic. This produces an irritation that often leads to fissured nipples and permits an infection which may lead to mastitis. Such cases are best treated by the open air method so successful in the treatment of burns. For this purpose and to prevent maceration we have devised a nipple aerator which is used under the binder while still in bed and thereafter is worn sewed into the brassière (fig. 1). In hospitals where antiseptics are forbidden and these aerators are used as a routine as a preventive measure beginning the first day after childbirth, nipple troubles are extremely rare or vanish very quickly.

A typical history is that of a druggist's wife who bathed her nipples in boric acid solution twenty times a day, or before and after each of ten nursings. At her first visit to the office, one nipple had a fissure more than 1 cm. long, and the other a granuloma 0.2 cm. in diameter. Each nursing caused excruciating pain. Elimination of antiseptics, the use of nipple aerators, and exposure of the nipple to sunlight resulted in a speedy cure. During the winter months mercury quartz light irradiations replace the sunlight.

In cases of inverted nipplies, aerators should be worn underneath the brassière for a period of six weeks before the birth of the child in order to evaginate the nipple and prevent intertrigo. Their daytime use should be continued after the confinement until the tendency to inversion is overcome.

The fear of producing pathologic conditions in the breast by nursing or by manual expression is sometimes a factor in depriving an infant of maternal feeding. Chief among such fears is the cancer bugaboo. Mothers need to be assured that cancer is no more common among women who have nursed their children than among those who have not; that when weaning was delayed much longer than is now customary, the extra irritation produced by a well developed set of teeth did not increase the incidence of the disease. Deaver and McFarland [2] have well said that "trauma of the female breast results in inflammatory rather than neoplastic disturbances." Lehmann offers statistical evidence that nursing is a prophylactic against mammary carcinoma.[3]

INSUFFICIENT MILK

The most commonly encountered problem of breast feeding is an insufficient amount of milk. Many mothers and their advisers take the hopeless, fatalistic attitude that this inadequate supply is a visitation of Providence from which there is no recourse. They do not realize that the mother or the babe may have remediable conditions directly responsible for this deficiency. The trouble is often found in the anatomic structure or pathologic condition of the mother's breast.

In shape, human breasts are of two general types, pendulous and virginal, either of which may be obese or glandular. If obese in character, manual expression may be necessary to increase the efficiency of the glandular portion. Occasionally one encounters incomplete development (micromazia) of one or both breasts. Even such organs, however, can furnish some milk throughout the normal lactation period of nine months, if the baby is assisted by manual methods in his task of increasing the supply. Complete occlusion of the milk ducts at the nipple may be remedied by operation, as shown by Sheets,[4] and allow breast feeding to proceed normally.

The most perfectly formed breasts will not function properly without adequate stimulation. This requires emptying of both breasts at least five times a day. If emptied less frequently, the glandular activity will not increase in proportion to the growth requirements of the infant. The supply varies directly as the demand. Weak or immature babies, those weighing 6½ pounds (3,000 Gm.) or less, should be aided by manual expression in their efforts to empty the breasts.

2. Deaver and McFarland: The Breast: Anomalies, Diseases and Treatment, ed. 1, Philadelphia: P. Blakiston's Son & Co., 1917, p. 457.
3. Ewing: Neoplastic Diseases, ed. 2, Philadelphia, W. B. Saunders Company, 1922, p. 506.
4. Sheets, O. B.: Atresia of the Nipples, J. A. M. A. 80:55 (Feb. 24) 1923.

The teaching of manual expression to mothers is not easy and is time consuming, since it is necessary in the beginning that the physician supervise the process three times a week in order to insure the correctness of the method used, to note the progress made, and to give the encouragement often so sorely needed. A comparison of the anatomy of the human breast with that of the cow's udder will clarify the reasons for the technic used (fig. 2). The bovine milk-holding ampulla is long and has a very short duct. It is so superficially placed as to be easily emptied when firmly grasped at the proximal end with the index finger and compressed successively by the other fingers. The ampulla of the human breast is short and deeply placed, necessitating a long duct. It can be reached only by deep, very firm pressure. This is best obtained by placing the thumb and forefinger on opposite sides of the breast approximately 3 cm. from the nipple, forcing them deeply into the tissue of the breast until the resistance of the ribs is felt, and then pressing them firmly together.[5] A forward stripping motion valuable in the dairy is practically valueless in obtaining large, strong streams from the human breast. In fact, a mother must be cautioned against using a forward or outward motion if rapid results are desired. In addition, if the fingers are permitted to slide on the breast, abrasions of the skin may follow.

The correct position and motion of the fingers vary with the type of breast. With the pendent breast the finger and thumb come together with a scissors-like motion (fig. 3). In such cases, manual expression is simplified, as almost any method works. Virginal breasts and those with inverted nipples present a much more difficult problem. In these, the tips of finger and thumb are inserted deeply into the areolar well and

Fig. 3.—"Deep" and "together" position for expressing milk and the easy scissors-like motion (thumb and first finger practically parallel) most useful with the pendent type of breast.

brought together three-fourths inch (2 cm.) behind the nipple (fig. 4). This might be described as a pincers motion or a bulldog grip. Mastery of manual expression technic is indicated by ability to force large, strong streams of milk a distance of 3 feet or more.

In view of the importance of breast feeding and of the results obtainable by manual expression, should we not devote more study and research to this fundamental subject?

5. Moore, C. U.: Nutrition of Mother and Child, ed. 3, Philadelphia, J. B. Lippincott Company, 1926, chapter VII.

SUMMARY

1. To overcome the mental hazards of motherhood regarding breast feeding, physicians must stress the fact that every mother who can care for her baby can nurse it.

2. The daily health routine of the lactating mother needs more careful study and regulation by the physician. The amino-acid and vitamin B content of the diet require special attention. Experimentally, a milk diet is very inadequate during this period.

Fig. 4.—Pincers-like motion with tips of thumb and finger coming together deep in the breast behind the nipple; useful with virginal types of breasts and in those with inverted nipples.

3. Abnormal constitutional conditions including contagious disease in the mother may necessitate artificial feeding for a time, but the glands should be kept active by manual expression, so that breast feeding may be resumed at the earliest possible moment.

4. Open tuberculosis is the only absolute indication for weaning.

5. Premature weaning is at present too frequently the result of remediable conditions in the mammary glands. Breasts and nipples deserve a complete examination, including inspection, palpation and milk expression. Nipple muscle hypertrophy and hypertonicity are curable.

6. Aseptic care of the nipples, together with the routine use of nipple aerators, prevents infections, fissures and mastitis. Aerators evaginate inverted nipples and permit the necessary open-air treatment.

7. The cancer bugaboo as an excuse for avoiding nursing or manual expression is refuted by experience and by statistics.

8. Insufficient milk supply is the most common problem in breast feeding. This problem is best solved by manual expression, the technic of which varies with the type of breast. Proper expression assures success.

Corbett Building.

Value of Physiology to Medicine.—The value of physiology to medicine is not to be measured merely by the direct practical utility, great as it may be and has been, of individual physiological discoveries, even when these are, like Harvey's, of a truly epoch-making character. The art of medicine must of necessity be reared as a superstructure on the science of medicine unless it is to be indistinguishable from mere empiricism; and the science of medicine, like other sciences, can only be advanced by observation and by experiment.—Bradford, J. R.: *Lancet* **2**:839 (Oct. 23) 1926.

EFFECTS OF DIET DURING PREGNANCY ON DEVELOPMENT OF RICKETS IN THE OFFSPRING*

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CINCINNATI

Rickets has been shown by many investigators, including Dunham,[1] DeBuys,[2] Park[3] and Eliot,[4] to be a disease that begins during the first four months of life. This early development emphasizes the importance of a possible prenatal influence on the disease. Hess and Weinstock,[5] using the modern methods of study by roentgenograms, found that the administration of cod liver oil to pregnant mothers did not prevent rickets in their infants. Practically all the other experimental evidence on the rôle of maternal nutrition in its relation to the occurrence of rickets in the offspring has been obtained by studies of rats. Byfield and Daniels,[6] and Korenchevsky and Carr[7] obtained some effect in prevention. The usual opinion is expressed by Hess and Weinstock,[8] who do not believe that it is possible entirely to prevent rickets by improving the diet of the mother previous to pregnancy, during pregnancy or throughout lactation. However, Hess[8] makes the significant statements: "It is probable that there is a prenatal or etiologic factor, [and] that the diet and regimen of the pregnant mother plays a rôle in the development of rickets in the infant. . . . It [rickets in the breast-fed] may be linked with a deficiency in the diet of the mother during pregnancy and lactation, a point of view which gives hope that in the future prophylaxis may be facilitated by regulating the dietary of the mother."

The investigations on the influence of the mother's diet by Ferguson,[9] Hutchison and Shah,[10] Dick,[11] Dunham, Willis and Guy,[12] Hess and Unger,[13] and Courtney[14] were of the analytic type; that is, the variety and estimated quantities of food voluntarily taken were listed and studied. Their results were contradictory and inconclusive. While the prevention of rickets in infants by prenatal measures has usually been unsuccessful, it is universally agreed, as stated by one of us,[15] that the diet of the pregnant mother should be digestible and of sufficient caloric value, should contain food rich in the antirachitic factor, and should be high in mineral content and of a type likely to influence favorably mineral retention.

In the present report we present what we believe to be the first attempt to study the effects of actively regulated diets of pregnant women on the development of rickets in their offspring. The methods of study were as follows: Twenty-five pregnant women who previously had had rachitic children were the basis of study. These women were studied in two groups over a period of eighteen months in order to include both winter and summer seasons. Only mothers apparently physically normal and promising to cooperate were chosen.

The dietary phase of the study may be stated briefly. Funds were provided in amounts sufficiently large so that the dietitians were in no way limited in obtaining food correct in quality and quantity for these pregnant women. For a period of three or four weeks, designated as the observation period, the families were visited to gain the mothers' confidence and to observe the dietary habits, housing conditions and general economic, physical and mental standards of the entire household. A number of control cases were studied in the same manner. At the end of the observation period, the experimental or supervision period began and continued approximately throughout the last three months of pregnancy. During this time the mothers' diets were supplemented by vegetables, cereals, fruit, eggs and milk (all of which were furnished free of expense to the mothers), the endeavor being to bring the daily food intake up to the proper standard for pregnant women. The standards sought were the daily ingestion of food containing 1 Gm. of calcium, 1.45 Gm. of phosphorus and 0.015 Gm. of iron, and having the equivalent of 2,500 calories. Since the reading of this paper, we have found that a diet similar to this is considered by Agnes K. Hanna[16] in her work with the Washington Rickets Study as one most likely to be "of value as a protection against rickets. In very few cases of our own were all the standards approximated, but the actual improvements in diets were so great as to warrant consideration in the final interpretation of results.

The facts relating to the diet and dietary computation may be thus summarized:

1. Daily dietary records were obtained from each subject by the visiting dietitians. Absolute accuracy was not expected, as the persons dealt with were uneducated and many of them of low mentality. However, their confidence in the dietitians and their own interest in having a physically well child stimulated the best cooperation possible.

2. The daily food intake during the observation period before any change was made in the diet showed an exceedingly low caloric value and an entirely inadequate supply of calcium, phosphorus and iron. In many cases only two meals a day were eaten, which consisted largely of meat, soup, beans, bread, coffee and occasionally milk, ice cream and fruit.

3. During the supervision period the attempt was made to bring the diet up to the standards. The calcium required was consistently reached because one quart of milk a day was supplied. The phosphorus intake was not quite up to standard, and iron and calories were usually definitely below standard.

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* Read before the Section on Diseases of Children at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

* From the B. K. Rachford Department of Pediatrics and the Department of Nutrition of the University of Cincinnati, and the Babies' Milk Fund Association of Cincinnati.

1. Dunham, E. C.: Rickets in an Infant of Thirty-Four Days, Am. J. Dis. Child. **26**: 155 (Aug.) 1923.
2. DeBuys, L. R.: Rickets in Breast-Fed Infant, Am. J. Dis. Child. **27**: 149 (Feb.) 1924.
3. Park, E. A.: Physiol. Rev. **3**: 106 (Jan.) 1923.
4. Eliot, M. M.: Control of Rickets, J. A. M. A. **85**: 656 (Aug. 29) 1925.
5. Hess, A. F., and Weinstock, Martha: Rickets as Influenced by Diet of Mother During Pregnancy and Lactation, J. A. M. A. **83**: 1558 (Nov. 15) 1924.
6. Byfield, A. H., and Daniels, A. L.: Rôle of Parental Nutrition in Causation of Rickets, J. A. M. A. **81**: 360 (Aug. 4) 1923.
7. Korenchevsky, V., and Carr, M.: J. Path. & Bact. **26**: 389 (July) 1923.
8. Hess, A. F., in Abt's Pediatrics, ed. 1, **2**: 913-952.
9. Ferguson, M.; H. M. Stat. Off. Med. Research Com. Spec. Report no. 20, London, 1917.
10. Hutchison, H. S., and Shah, S. J.: Quart. J. Med. **15**: 167 (Jan.) 1922.
11. Dick, J. L.: Rickets, New York, E. B. Treat & Co., 1922, p. 418.
12. Dunham, Willis and Guy: Unpublished data reported by Park (footnote 3).
13. Hess, A. F., and Unger, L. J.: Diet of Negro Mother, J. A. M. A. **70**: 900 (March 30) 1918.
14. Courtney, A. M.: Effect of Inadequate Diet on Inorganic Salt Content of Mother's Milk, Am. J. Dis. Child. **26**: 534 (Dec.) 1923.
15. Mitchell, A. G.: Internat. Clin. **4**: 117 (Dec.) 1925.
16. Hanna, Agnes K.: Personal communication to the authors.

4. In spite of the fact that the standards were not reached, striking improvements were made. For example, the increase in calories varied from 7 to 132 per cent; the calcium increase from 32 to 618 per cent; the phosporus increase from 15 to 340 per cent, and the iron increase from 11 to 272 per cent. The inability to increase the diets to the standards aimed at was not due to lack of funds or effort, but to the chronically poor appetite of the mothers. In two cases, the only increase was in calcium. Charts 1 and 2 illustrate graphically the effect of the supervision on the diet in two of the cases.[17]

5. An example of a single day's diet of one of the mothers during the observation period, and one of the same mother during the supervision period are shown in Table 1.

6. After delivery, when the active supervision ceased and additional food was no longer supplied, all of the mothers, with but one or two exceptions, returned to the dietary habits of the observation period. Therefore the only factor known to be modified in this study was the mothers' diet in the latter months of pregnancy.

The babies born to these mothers received the usual care from the Babies' Milk Fund Association, except that cod liver oil was withheld for a period of eight months. They were studied at frequent intervals. The

TABLE 1.—*Observations in Case 9*

	Calories	Calcium, Gm.	Phosphorus, Gm.	Iron, Gm.
Observation Period				
Milk, 1 cup	160	0.261	0.201	0.00055
Bread, 3 slices	108	0.027	0.039	0.00039
Bacon, 2 slices	50	0.001	0.016	0.00022
Pork chop, 1	300	0.002	0.033	0.00045
Gravy, 1 tablespoonful	66	0.002	0.008	0.00007
Sugar rolls, 3	250	0.054	0.078	0.00078
Fried potatoes, ½ cup	100	0.008	0.042	0.00089
Sardines, 3	114	0.009	0.103	0.00045
Crackers, 4	100	0.006	0.025	0.00036
	1,248	0.370	0.545	0.00416
Supervision Period				
Milk, 4½ cups	720	1.174	0.904	0.00247
Egg, 1	84	0.030	0.082	0.00128
Bacon, 2 slices	50	0.001	0.016	0.00022
Oatmeal, 1 cup	100	0.008	0.049	0.00048
Bread, 3 slices	109	0.027	0.039	0.00039
Butter, 1 teaspoonful	33	.....	.....	0.00001
Potatoes, 2	200	0.032	0.138	0.00312
String beans, 2 cups	100	0.088	0.100	0.00212
Tomatoes, 2 slices	8	0.005	0.011	0.00008
Corn, 1 ear	100	0.008	0.136	0.00105
Chicken, 1 piece	100	0.012	0.216	0.00390
Gravy, 1 tablespoonful	66	0.002	0.008	0.00007
Candy, 2 pieces	100	.....	.....	.....
	1,770	1.387	1.699	0.00929

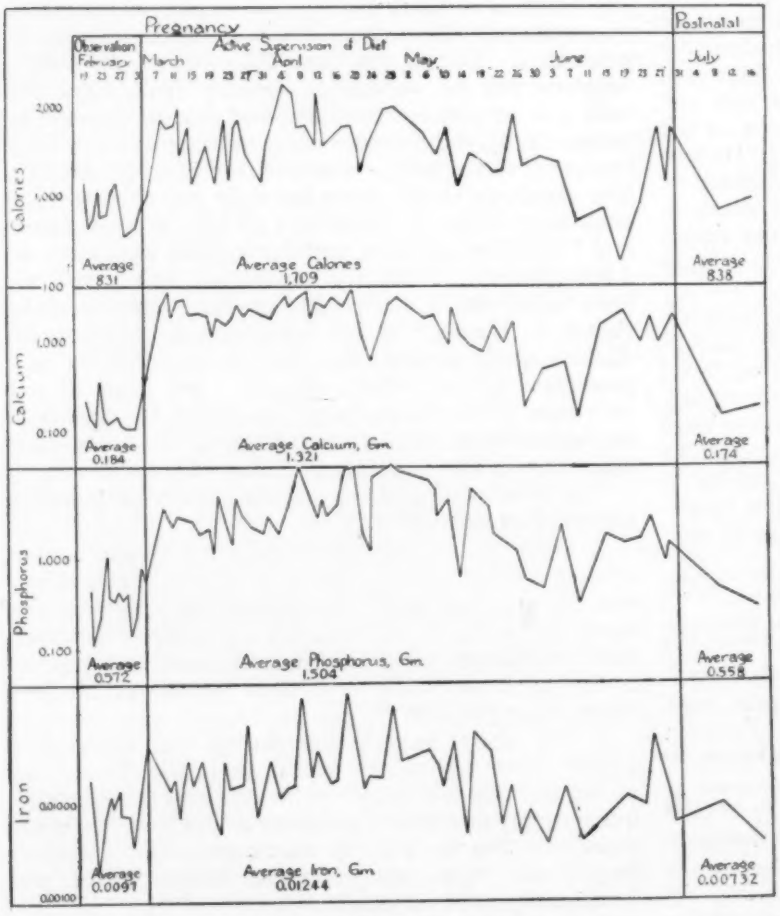

Chart 1.—Daily intake in case 1.

clinical examinations were made on the babies in their homes. In arriving at a clinical diagnosis of rickets in these young babies, only the following points were considered: size of the fontanels, softness of the bones of the skull, size and shape of the wrists, beading and flaring of the ribs, and muscular tonus. Roentgenographic examinations of the wrists were made, and, when possible, calcium and phosphorus determinations of the blood were done. Studies were also made of the calcium and phosphorus content of the mothers' blood serum and breast milk.

A control series of twenty-five infants of the same age and social status for whom cod liver oil was ordered as a routine was also studied. One hundred per cent of these were found by roentgenographic examination to have rickets by the eighth month. Observations in three experimental cases are given in the accompanying protocols. Tables 2, 3 and 4 give a summary of the essential facts of all the protocols.

The degree of rickets recorded in table 2, in the columns marked Clinical Examination and Roentgen Ray, refers to the greatest degree of rickets found at any time during the period of observation. In the case of a baby who showed mild rickets clinically at 4 months of age and no evidence of clinical rickets at 8 months, the notation "mild" is made in the Clinical Examination column. In the column marked Combined Results, the greatest degree of rickets found is recorded, whether it was found by clinical examination or by roentgenogram.

COMMENT

1. The mother whose infant did not develop rickets was one of two in whose diet throughout the last months of pregnancy there were approximated the standards sought. In the infant of the other mother, rickets was not found until after the eighth month.

2. The average daily calories in the antepartum diets of the mothers whose infants developed moderate and marked rickets were, as a group, lower (average, 1,490)

17. The detail of the dietary studies will be published later by Professor Otis.

than in the group whose infants developed mild rickets (average, 1,707).

3. In the entire series, regardless of the degree of rickets, the mineral intake of the mothers was approximately the same.

4. In the cases in which blood examinations were made, the inorganic phosphorus content of the mothers' serum, obtained in the antepartum period, was uniformly normal, while the inorganic phosphorus content of the babies' serum was below normal. The calcium content of both mothers' and babies' blood serum was normal.

5. Frequently a low calcium content of the breast milk was found, possibly the result of the inadequate diets of the mothers during the lactation period, since practically all of them returned, during that period, to their previous habits of eating, consuming a diet in which milk especially was lacking. The inorganic phosphorus of the breast milk was uniformly normal.

6. The season of the year in which the babies were born apparently had no influence on the degree of rickets found, although the series is too small to make this statement of any significance.

7. Five of the babies found by roentgenray examination to have rickets had no clinical evidence of rickets. Two babies whose roentgenologic examinations were negative for rickets were considered to have the disease clinically.

8. The incidence of rickets in this series of twenty-two babies to whom cod liver oil was not given was as follows: By the eighth month, sixteen of the infants showed rickets on clinical examination (73 per cent) and nineteen showed rickets by roentgenologic examination (87 per cent). These figures may be compared with those of Eliot,[4] DeBuys[2] and Wilson.[18] Eliot found in New Haven, in a series of 216 infants intensively treated with cod liver oil and sunlight, that clinical signs of rickets were present in 86 per cent, and that by roentgenologic examination 83 per cent showed rickets by the eighth month. DeBuys found in New Orleans, in a series of 197 breast-fed infants

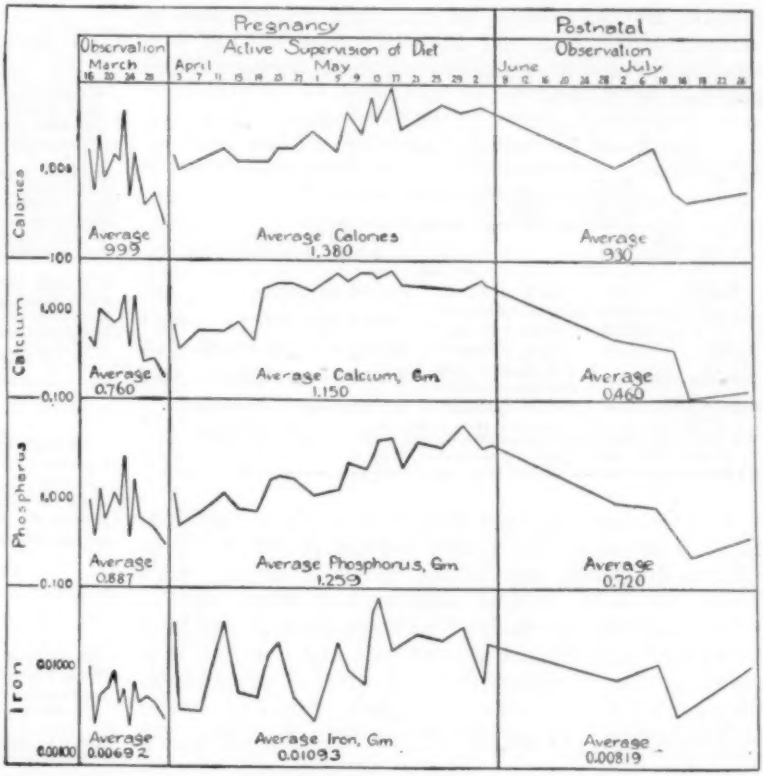

Chart 2.—Daily intake in case 18.

18. Wilson, M. G.: Prevention of Rickets, Am. J. Dis. Child. **31**: 603 (May) 1926.

TABLE 2.—*Summary of Case Reports* *

Case	Color	Age of Mother, Years	Pregnancy, No.	Supervision Period, Average Daily: Calories	Calcium, Gm.	Phosphorus, Gm.	Iron, Gm.	Baby Born	Sex	Degree of Rickets: Clinical Examination	Roentgen-Ray Examination	Combined Results	Comment
1	B	33	10	1,710	1.321	1.504	0.01244	6/28/25	♂	Mild	Mild	Mild	
2	B	25	6	1,877	1.352	1.609	0.01257	8/ 9/25	♀	.....	.....	.....	Lost from observation
3	B	31	10	2,322	1.205	1.383	0.01360	1/27/25	♂	Mild	Negative	Mild	
4	B	26	2	1,706	1.156	1.235	0.01406	1/11/25	♀	Negative	Mild	Mild	
5	B	24	6	1,463	1.027	1.294	0.01388	4/ 5/25	♀	Mild	Mild	Mild	
6	B	22	2	1,573	1.305	1.378	0.01109	1/20/25	♀	Negative	Mild	Mild	
7	B	21	3	1,499	0.857	1.068	0.01070	8/27/25	♀	Moderate	Moderate	Moderate	
8	W	42	10	1,581	1.334	1.339	0.01142	2/17/25	♀	Mild	Mild	Mild	
9	B	27	3	1,529	1.114	1.352	0.01372	7/30/25	♀	Mild	Mild	Mild	
10	B	24	7	1,524	1.359	1.345	0.01158	1/ 8/25	♂	Marked	Marked	Marked	
11	B	29	6	1,521	1.071	1.101	0.00953	12/24/24	♂	Negative	Mild	Mild	
12	B	24	3	1,612	1.165	1.291	0.01280	1/27/25	♀	Mild	Marked	Marked	
13	B	19	2	1,606	1.023	1.238	0.01323	3/14/25	♂	Negative	Mild	Mild	
14a	B	32	2	1,969	1.294	1.548	0.01597	1/20/25	♀	Mild	Mild	Mild	Twins
14b	..	..	..	.....	.....	.....	.....	1/20/25	♀	Mild	Mild	Mild	Twins
15	B	19	3	1,995	1.258	1.485	0.01363	9/10/25	♀	.....	.....	.....	Lost from observation
16	W	29	3	1,960	1.323	1.526	0.01280	2/ 8/25	♀	Negative	Mild	Mild	Bottle fed after 3 mos.
17	B	27	4	2,023	1.351	1.283	0.01122	1/ 9/25	♀	Mild	Negative	Mild	
18	B	27	4	1,380	1.150	1.259	0.01093	6/ 6/25	♂	Marked	Marked	Marked	
19	W	26	4	2,310	1.091	1.418	0.01705	3/27/25	♀	Negative	Negative	Negative	
20	W	40	8	1,635	1.190	1.641	0.01401	3/27/25	♀	Mild	Mild	Mild	Bottle fed after 3 mos.
21	B	31	7	1,500	1.249	1.249	0.01070	1/ 4/25	♀	Mild	Marked	Marked	Mother had one plus Wassermann
22	B	25	3	1,192	1.008	1.261	0.01257	7/24/25	..	.....	.....	.....	Seven months fetus
23	B	24	4	1,400	1.174	0.990	0.00660	1/14/25	♀	Mild	Mild	Mild	
24	B	24	3	1,500	1.190	1.277	0.01292	7/25/25	..	.....	.....	.....	Infant died at 4 hours
25	B	21	2	1,449	1.186	1.284	0.01184	8/15/25	♂	Mild	Marked	Marked	
										6 Negative	3 Negative	1 Negative	
										13 Mild	13 Mild	15 Mild	
										1 Moderate	1 Moderate	1 Moderate	
										2 Marked	5 Marked	5 Marked	

* B indicates negro; W, white; ♂, male; ♀, female.

not given cod liver oil, that rickets was shown by clinical examination in 100 per cent. Wilson found in New York, in a series of forty-seven infants born in winter and given cod liver oil, that 68 per cent developed clinical and 91 per cent roentgenologic evidence of rickets; and in a series of thirty-six infants born in summer and given cod liver oil, that 91 per cent developed clinical and 98 per cent roentgenologic evidence of rickets.

TABLE 3.—*Statistical Summary of Cases*

22 babies under observation for 8 months
20 babies breast-fed
2 babies bottle-fed after three months
18 black
4 white
16 born in winter
6 born in summer

Results

1 baby	white	born in winter	showed no rickets	4.5%
15 babies	3 white, 12 black	12 born in winter, 3 born in summer	showed mild rickets	68.2%
1 baby	black	born in summer	showed moderate rickets	4.5%
5 babies	all black	3 born in winter, 2 born in summer	showed marked rickets	22.7%

11 babies examined clinically between 3d and 4th month showed no rickets 50.0%
3 babies examined roentgenologically between 3d and 4th month showed no rickets 13.7%

9. As rickets has been shown by modern investigations to be almost universally present in breast fed as well as artificially fed babies, in white and in black babies, in those born in summer and those born in winter, and in those early given large doses of cod liver oil as well as those not treated with cod liver oil, it is apparent that in evaluating any method of prophylaxis the severity as well as the incidence of rickets should be considered. In presenting the data regarding the severity of rickets in the infants of this series, a list of published cases suitable for comparison cannot be found, since the severity of rickets referred to in the literature usually concerns the degree of rickets found on clinical examination rather than by roentgenologic or combined clinical and roentgenologic observations. If a comparison may be made of the groups within this series, however, certain facts are noteworthy. The infants whose mothers received a low caloric intake had a greater percentage of the more severe grades of rickets than the infants whose mothers received a higher caloric intake; and the average caloric intake of the group whose infants developed moderate or severe rickets is distinctly lower than that of the group whose infants developed only mild rickets. Furthermore, no mother in this series whose caloric intake was above 1,700 calories gave birth to an infant who showed more than mild rickets at any time, by either clinical or roentgen-ray examination.

TABLE 4.—*Relation Between Caloric Intake of Mothers and Degree of Rickets in Offspring*

(*a*) Cases Grouped According to the Level of the Average Daily Caloric Intake of the Mothers

Average Daily Calories	No. of Cases	Degree of Rickets by Combined Clinical and Roentgen-Ray Examination: Negative	Mild	Moderate	Marked	More Than Mild
1,300-1,499	5	0	2	1	2	60%
1,500-1,699	9	0	6	0	3	33%
1,700-2,400	8	1	7	0	0	0%

(*b*) Cases Grouped According to the Degree of Rickets in the Infants

Degree of Rickets	No. of Cases	Average Daily Calories of Group
None	1	2,310
Mild	15	1,707
Moderate or marked	6	1,490

PROTOCOL OF CASE 3

Clinical examination positive for rickets; roentgen-ray examination negative.

Mother, black, aged 31; tenth pregnancy; did not live in the same house during last pregnancy; home conditions, fair; family annual income, $1,000.

		Calories	Average Daily: Calcium, Gm.	Phosphorus, Gm.	Iron, Gm.
Observation period (began 10/7/24)		2,151	0.672	1.204	0.01708
Supervision period (began 10/29/24)		2,322	1.205	1.383	0.01560
Increase		160	0.533	0.179	0.00348
Percentage increase		8	80	15	22
Baby born	1/27/25	Full term male			
Blood of mother	2/26/25	P. 2.90, Ca. 8.90; Wass. negative			
Roentgen ray	2/26/25	Age 1 month, negative for rickets			
Roentgen ray	7/ 2/25	Age 5 months, negative for rickets			
Clinical examination	7/19/25	Age 5½ months, negative for rickets			
Baby weaned because of mother's pregnancy	8/ 4/25	Age 6 months			
Breast milk	8/ 5/25	Right breast, P. 8.15, Ca. 32.93			
Blood of baby	8/26 25	P. 2.89, Ca. 11.20			
Roentgen ray	8/26/25	Age 7 months, negative for rickets			
Clinical examination	10/25/25	Age 8¾ months, mild rickets			

PROTOCOL OF CASE 6

Clinical examination negative for rickets; roentgen-ray examination positive.

Mother, black, aged 22; second pregnancy; lived in same house during last pregnancy; home conditions, fair; family annual income, $1,000.

		Calories	Average Daily: Calcium, Gm.	Phosphorus, Gm.	Iron, Gm.
Observation period (began 10/26/24)		1,256	0.982	1.123	0.00814
Supervision period (began 11/3/24)		1,573	1.305	1.378	0.01109
Increase		317	0.323	0.255	0.00295
Percentage increase		25	32	23	36
Blood of mother	11/29/24	P. 3.67, Ca. 9.80; Wass. negative			
Baby born	1/20/25	Full term female			
Roentgen ray	5/ 2/25	Age 3 months, mild rickets			
Roentgen ray	6/30/25	Age 5 months, mild rickets			
Clinical examination	7/19/25	Age 6 months, negative for rickets			
Breast milk	8/13/25	Right breast, P. 7.50, Ca. 31.00; left breast, P. 7.30, Ca. 30.63			
Roentgen ray	8/14/25	Age 6¾ months, mild rickets			
Clinical examination	11/ 2/25	Age 9½ months, negative for rickets			
Roentgen ray	11/ 2/25	Age 9½ months, mild rickets			
Blood of baby	11/ 3/25	Age 9½ months, P. 2.87, Ca. 9.78			
Breast milk	11/31/25	Right breast, P. 5.21, Ca. 23.20; left breast, P. 5.00, Ca. 23.64			

PROTOCOL OF CASE 19

Clinical examination negative for rickets; roentgen-ray examination negative.

Mother, white, aged 26; fourth pregnancy; did not live in the same house during last pregnancy; home conditions, fair; family annual income, $1,100.

		Calories	Average Daily: Calcium, Gm.	Phosphorus, Gm.	Iron, Gm.
Observation period (began 10/10/24)		1,784	0.449	1.078	0.01535
Supervision period (began 11/5/24)		2,310	1.091	1.418	0.01705
Increase		526	0.642	0.340	0.00165
Percentage increase		38	143	31	11
Blood of mother	12/13/24	P. 2.30			
Baby born	3/27/25	Full term female			
Blood of mother	5/15/25	Wassermann negative			
Roentgen ray	5/15/25	Age 1½ months, negative for rickets			
Roentgen ray	6/26/25	Age 3 months, negative for rickets			
Clinical examination	7/19/25	Age 3¾ months, negative for rickets			
Breast milk	8/12/25	Right breast, P. 6.41, Ca. 27.01; left breast, P. 7.41, Ca. 26.68			
Blood of baby	8/19/25	Age 4¾ months, P. 2.46, Ca. 10.43			
Roentgen ray	8/19/25	Age 4¾ months, negative for rickets			
Clinical examination	11/29/25	Age 8 months, negative for rickets			
Roentgen ray	1/15/26	Age 9¾ months, negative for rickets			

CONCLUSION

Our experiment would indicate that if the diet of the mother during the last three months of pregnancy can be made approximately correct in caloric and mineral intake, while it will not prevent rickets, it will have a controlling influence on the development of the disease in her offspring.

THE BREAST FEEDING DEMONSTRATION AND THE PHYSICIAN

FRANK HOWARD RICHARDSON, M.D.
BROOKLYN

Hand in hand with the reawakening of interest in the possibilities of breast feeding on the part of the medical profession has gone a new development in welfare work; namely, the breast feeding demonstration. For both these movements, the medical and the social, Julius P. Sedgwick deserves undying praise. It was he who worked out the mechanics of the technic of breast feeding that many of us have found most useful in our individual work with mothers and babies; and he it was who established the classic rules for the conduct of the breast feeding demonstration. It would be hard to conceive of doing either line of work, the medical or the social, without hewing to the lines that he laid down.

The two cardinal principles governing the medical handling of a case of breast feeding are too well known to need more than passing mention here. They are, of course, (*a*) complete emptying of the breast at each feeding, either by the baby himself or by the expressing thumb and finger of the mother, and (*b*) complementary feeding, to maintain the normal rate of gain of the baby until the mother's milk becomes adequate without this help. With these two cardinal points as a basis, interested scientific workers are constantly carrying forward the fascinating study of the physiology of the interaction of lactating breast and nursing baby, with the thousand and one problems in pediatrics, obstetrics, and organic chemistry involved, until at last the time is approaching when we shall get our knowledge of human lactation at first hand, and not as hitherto solely by analogy with the time-honored milk-producing mammal which has so far supplied most of our scientific data regarding milk production.

In a similar way, Sedgwick laid down for us three cardinal points for the conduct of the new social experiment, the breast feeding demonstration. The three prerequisites are: (*a*) an interested and informed nucleus of medical men, enthusiastic over the possibilities and the advantages of breast feeding and possessing a scientific grasp of its technic; (*b*) the birth-recording bureau of the local department of health, and (*c*) an administrative bureau with an adequate staff of trained visiting nurses, to visit every new mother within a short time of the birth of her baby. So far, no demonstration has been able to get along without any one of these legs of the tripod.

When we come to evaluate the results of a breast feeding demonstration based on these three factors, however, we have usually found that they fall short of what thoughtful workers had hoped they might be. It is easy enough to get brilliant figures for the period actually covered by the mechanism of the demonstration. Those obtained in Minneapolis (from 92 to 96 per cent on the breast for the first month, according to the interpretation given the results obtained, down to about 70 per cent for the first six months) can be duplicated anywhere by conscientious work. We reproduced them in our work in Nassau County (Long Island), New York, in 1923 and 1924; and Wakeman bettered them to an encouraging extent in his Hornell (N. Y.) demonstration in 1925. But such a piece of work must be judged, not by the figures of the year in which it is actually in operation, but by the results obtained year after year, when the active demonstration is a thing of the past. Judged by this standard, the results of these demonstrations have been far less encouraging. It is to record this fact, report progress toward remedying it, and outline a plan that it is hoped will be the solution of the difficulty that this paper is written.

The difficulty always has been, of course, that the large body of the local medical profession has failed to take hold of the new idea with the readiness shown by the smaller interested medical group, the visiting social nursing staff, or the laity to whom the broad appeal has been made. Failing such informed cooperation on the part of the medical profession at large, the success of the undertaking as a permanent medical advance was of course hopelessly foredoomed. It is needless here to attempt to explain the lack of interest evinced; the fact remains that such has been the experience everywhere.

In the Nassau demonstration, a distinct step in advance was taken which did away with much of the irritation and even active opposition of the medical profession seen elsewhere. Here the rule was made that no mother was to be seen by any visiting nurse until the consent of the physician who had signed the birth certificate had been obtained. This may seem like a very small matter to those who have never been through a health demonstration of any sort. To any one who has had this experience, however, it will be at once evident that this simple rule forestalled the main cause of complaint of the attending private physician; namely, suddenly finding that a nurse on his case has acquainted his patient with the movement, without giving him an opportunity of explaining the thing himself. The elimination of this disagreeable feature did much to insure the success of the Nassau demonstration. This step is earnestly urged on any community attempting such a piece of work in the future. A mistaken idea that it is unnecessary and wasteful has caused near failure in an otherwise promising piece of work in one of our largest cities. It can hardly fail to have a like result wherever else it is allowed to prevail.

In considering the advisability of putting on the so-called daughter demonstrations in other parts of New York State, such as Hornell, Cortland, or Ithaca, a second rule has been observed scrupulously and to it can be directly attributed the better feeling noticeable in these places. This rule is that in no place will the state department of health consider lending aid through its district state health officer, local nurses, bureau of vital statistics and instructing breast feeding nurse unless the county medical society or local academy of medicine asked for such help and decided by a formal resolution that it desired to put on a breast feeding demonstration in its locality. It will readily be seen that this was a distinct advance over the procedure in Nassau County, where, although the matter was presented to all the local medical, nursing and welfare organizations in this closely populated district, it did not seem wise to hold up the initial demonstration by putting it to a vote before the county society. When once a definite piece of pioneer work had been done in the state, as an example of what could be done to universalize breast feeding, the iron-clad rule was enforced that only at the instance of organized medicine would a demonstration be put on anywhere within the state. Needless to say, such a rule ought to be enforced everywhere. Welfare work cannot proceed faster than the general interest and informed participation of the medical profession; any attempt to go ahead along lines other than these is almost hopelessly foredoomed.

There remains one more step to be taken before the breast feeding demonstration becomes the force for definite, enduring, permanent medical and social advance that it can become if only its proponents can have the wide and far-seeing vision necessary to safeguard it from its known and evident weaknesses. I am urging that this step be taken by two large cities that are just on the verge of inaugurating breast feeding demonstrations. The step is perfectly logical, and it follows inevitably from what has been said before, and from the experience of every community that has attempted this type of work in the past. It consists in bringing to the members of the local medical profession, through their own unit of organized medicine (usually the county society, though the local academy of medicine, affiliated with organized medicine, may be preferable in the case of small cities within large counties) the whole message of breast feeding, as part of the graduate education movement that is spreading over the whole country. In this way, the technic of breast feeding, its almost universal applicability, its possibilities, its advantages, its difficulties, can all become matter of common knowledge to the men who are eventually, it is to be hoped, to carry on the work in their own community. As a part of such a graduate education movement on the part of the county medical society, at least one center should be established in which clinical opportunities may be offered. Such a center, administered by a pediatrician who is enthusiastic over breast feeding and thoroughly conversant with its difficulties, is invaluable. Expression of the breast milk, the handling of the reluctant nurses, the prevention and treatment of caked breast and cracked nipple, the handling of the regimen of lactation, can here be learned in practice, which is immensely more convincing and satisfactory than didactic teaching, however admirable that may be. What is perhaps the most valuable feature of such teaching, however, is the fact that it is offered by the physicians' own organization, and not by some outside agency, no matter how well meaning and conscientious such agency may be. Physicians as a class are unusually ready and eager to secure graduate education and perfect themselves in the intricacies of their craft. But they have a very human desire to initiate their own betterment; and they are singularly averse to "being done good," and told which way to go.

When such teaching of the medical profession by the medical profession, as is now in contemplation by at least one of our largest cities, becomes an accomplished fact, and precedes by some months the actual inauguration of the city wide propaganda for universalizing breast feeding, we shall have a demonstration such as has never before been staged. And the figures obtained during the active, "artificial" stage of the demonstration will be the minimum or basic figures; and succeeding years will show an increase, instead of a decrease, until at last, in such a community, breast feeding finally definitely comes into its own.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MOORE AND DENNIS, DRS. GREENEBAUM, SELKIRK, OTIS AND MITCHELL, AND DR. RICHARDSON

DR. E. J. HUENEKENS, Minneapolis, Minn.: It is the duty of this section to encourage breast feeding. I know of no better way of spending money in prevention of diseases than by the encouragement of breast feeding. I would commend particularly what Dr. Richardson said about his breast feeding demonstration, and about the great difficulties that are encountered in carrying on such a demonstration. He has evolved several new points which are a distinct improvement on the way it was originally carried out in Minneapolis by Dr. Sedgwick. Especially to be commended are his methods of getting this work before the medical profession, for that is the great stumbling block in this work. In Minneapolis, after the original demonstration period by Dr. Sedgwick, owing to financial difficulties the work was turned over to the Infant Welfare Society. Though a great point was made in getting in contact with physicians, the transfer has not been successful. The fact that these infant welfare nurses are connected with so-called free clinics has prejudiced physicians against them entirely, and a large percentage of the physicians refuse to allow the nurses to advise the patient. Nurses to be employed in such a demonstration should have no connection whatever with any free clinic, because that is a prejudicing point. I want to commend Dr. Moore's so-called nipple aerator. I think that is probably a good point in preventing nipple trouble, which often gives a great deal of difficulty in nursing. There are two points in his paper to which I would like to take some exception. One of these was his emphasis on the four-hour nursing interval. I also am a great believer in the four-hour nursing interval, but I believe in many cases, when there is not sufficient breast milk, a more frequent interval is indicated. I think we have gone too far in forcing the four-hour feeding, and there are many exceptions to the four-hour nursing. We should tend more and more to bring out those exceptions. The other point that I would somewhat take exception to is the fact that he advises that nursing mothers with scarlet fever should have their babies nursed at the breast right in the hospital. The safer technic would be to express the mother's milk and feed it to the baby, thus avoiding direct contact between mother and child.

DR. M. L. TURNER, Des Moines, Iowa: I want to tell what we are doing in Des Moines. We have for twelve years been conducting clinics. The last three years we have had four clinics, and this last year we saw 800 babies at the four clinics. Our aim is to encourage the mothers to nurse their babies. First, we insist that the mothers must rest and sleep every afternoon. Their diet must be the same after birth as it is before, in order that they will not take toast and tea which would furnish very little milk. In order to get the babies to have a better quality of milk, we insist on the mothers eating, as Dr. Sedgwick says, everything that the father ought to eat, and we are encouraging them a little further. We are telling them to eat raw materials, raw potatoes, raw carrots, raw celery and cabbage. We get this idea from the fact that McCullom says that the animal gets a better type of vitamin and more of it if let run on the grass. We know that the mother gives more milk when she is taking these raw materials. She gives a better flow of milk, and the baby seems to prosper better. Above all, the mother should lie down and sleep every afternoon. We have a large number of mothers whom we have induced to nurse their babies after they had weaned them. One woman's baby was born when she was 39 years of age. She weaned her baby after eight weeks. We turned the baby to the breast. She followed out the regimen spoken of, and nursed it for a year. We have had splendid success in nursing the babies when we follow this regimen. We find also that the babies, when the mothers have been sleeping, and eating these raw materials, do not develop rickets as they sometimes do when they are not fed on the raw materials.

DR. A. J. SCOTT, Los Angeles: In conjunction with Dr. Moore's paper and Dr. Richardson's, it might be of interest to mention an experiment we started in Los Angeles on wet-nursing at the suggestion and with the advice of Dr. Hoobler of Detroit. From May, 1925, to April 1, 1926, we collected 26,773 ounces of breast milk. That milk cost $2,740.94 or an average of 12 cents an ounce. The number of babies fed has been ninety-seven. The ages are from less than 1 week to more than 1 month. We had one mother who, on the method of stimulating the breast that Dr. Moore brought out, sold us 80 ounces of milk a day for more than four months besides feeding her own infant. Her pay check was more than $8 a day. We pay these mothers 10 cents an ounce and their carfare.

DR. G. B. MCFARLAND, Dallas, Texas: I should like to ask Dr. Greenebaum whether he had any record of the birth

weight or the effect his diet had on the birth weight, and the increase in weight of the mother during the period of pregnancy.

DR. CHARLES G. KERLEY, New York: We are all in accord with the propaganda that mothers should nurse their children. There is something else, however, that is necessary. There should be just as active a propaganda for the observation of the child afterward. That should be insisted on. In the last analysis, the nutrition of children is not based at all on sentiment. It is the delivery of the nutrition to the child. There may be just as exquisite a case of rickets and malnutrition from the breast feeding as from a proprietary food. As a result of intense propaganda, approaching young mothers from the duty standpoint, one gets a great deal of cooperation as has been shown, and some infants will be nursed longer, if unobserved, than is to their best advantage.

DR. F. W. SCHLUTZ, Minneapolis: The conclusions of Dr. Greenebaum and Dr. Mitchell are interesting. It should be possible to accomplish with the nursing mother what is apparently easily accomplished with the lactating animal in the agricultural experiment. I should like to ask Dr. Greenebaum whether any difference was noted in the calcium and phosphorus level as compared between winter months and summer months? Hess and other observers have noted definite differences. These differences in the level seemed to depend on different periods of the year and even of the day. I should also like to ask Dr. Greenebaum whether the infants which he observed and found to be not rachitic after eight months had received milk from mothers on a high caloric diet; and whether they had been particularly exposed to sunlight. They were not given cod liver oil; but liberal exposure to sunlight could have been a contributing factor in the prevention of rickets.

DR. H. R. SACKETT, St. Petersburg, Fla.: I am extremely interested in what has been said. It has been very helpful, but I should like to know what has been the experience of these men who have made a special study of this on the effect of fevers of various kinds. Tuberculosis has been mentioned. Outside of tuberculosis, what has been the experience of these men in relation to the general fevers, whether scarlet fever or diphtheria, or any of the other contagious diseases? How far can we go with safety in advising mothers with any of these contagious diseases to nurse their babies?

DR. E. J. HUENEKENS, Minneapolis: In answer to the immediate question that was asked, I do not think scarlet fever or any of the other fevers other than tuberculosis are contraindications to the giving of breast milk to the baby. However, Dr. Moore in his paper advises the continuing of nursing during scarlet fever of the mother. I do not know that there is any tremendous objection to it, but I would feel that it was safer to separate the mother and baby, and have the mother's breast milk expressed rather than have the baby come in immediate contact with the mother.

DR. FLOYD CLARKE, Omaha: I was confronted with the same problem of nursing babies whose mothers had scarlet fever in the last three months. I was somewhat in doubt as to the proper procedure. However, I concluded that I would allow the mothers to nurse the babies. I had very satisfactory results. I think we had about six cases altogether in one of the maternity homes that I am connected with. I continued to allow the mothers to nurse the babies throughout the course of the scarlet fever. There was direct contact with the mother without any infection of the baby. The mother pursued the regular course of scarlet fever, was given the Dick serum, and went along without any trouble. There was practically no loss of weight on the part of the baby. In fact, some of them gained, probably not as much as they would had the mother not had the scarlet fever, but the breast secretion was kept up throughout the course of the disease. The babies were not given an immunizing dose of the Dick serum.

DR. F. H. RICHARDSON, Brooklyn: I want to thank Dr. Kerley for the point he made when he said that we do not need to propagandize the mother. If we were to put an "ad" in the paper for three days telling the public about the necessity of breast feeding, our offices would be overcrowded, and we should not be prepared to handle the cases. That is what we want to avoid. Let us rather, propagandize the physician and let him see what all this talk about the universal applicability of breast feeding is all about. But we have no right to propagandize the social group, the health department or the medical society. No medical society can teach me to take out an appendix if I do not want to learn; but it can offer me a course in the taking out of appendixes. If I am going to take out appendixes and don't know how to do it, and am advertising myself as a surgeon who knows how to remove an appendix, I can at least learn how to do it. We can't make the medical profession prescribe breast feeding for the babies, but we can as a medical society offer to instruct those physicians who wish to learn how to do this. As Dr. Kerley says, many a child is harmed by the fact that the mother urges the physician to do what he doesn't know how to do; that is, keep her baby on the breast. What we can do is offer him instruction. I dare not disagree with Dr. Kerley, because he bent the twig—not over me; but I was the twig he bent, about twenty years ago. As to the four-hour interval, I think that that question answers itself, if the baby is satisfied at the time of each nursing. That, of course, is diametrically opposed to what most of us learned in medical schools. I do not believe one can overtax the capacity of the baby's stomach by breast feeding or complemental feeding. What Dr. Moore hinted at today has given us an idea of the wonderful possibilities of scientific research in this problem. The surface of this matter has not been scratched. We have not yet really begun the study of breast feeding, as it should be studied. Dr. Turner brought up the point about rest. I have found it far more important to regulate rest than diet. Most mothers will regulate their diet; but very few women will get rest enough during the months that they are nursing their babies. Nine hours' sleep at night, and a daily nap, should constitute a minimum, not a maximum. If the mother will take one quart of fresh, clean milk, in addition to what she wants or what she does not want, I think that will regulate the diet. Fresh green vegetables and whole wheat flour are of course most important. The question of keeping the babies of mothers with acute infectious diseases on the breast has been answered by Dr. Clark more satisfactorily than it could have been by any of the rest of us, for he has not told his impressions, which is all Dr. Huenekens or I could have done; but he has told what he has actually done, which is far more important. We can always, as Dr. Moore has shown us, and as he has stood for so strongly and so consistently, reinstitute breast feeding. As to the statement that we do sometimes see some miserable breast-fed baby who might have done better had he been weaned and adequately fed artificially, we may as well freely admit this. On the other hand, had such a baby been properly breast-fed—by means of the addition of an offered complementary feeding after every inadequate breast feeding—it is perfectly safe to say that we should have had an even better result. We may admit that many a breast-fed baby is malnourished or that he contracts rachitis; many of his artificially fed brothers, however, did not survive long enough to manifest the signs of any other disease than those of the gastro-enteritis of which he died.

DR. C. ULYSSES MOORE, Portland, Ore.: In abstracting my paper, several points were just mentioned, not developed. There is probably no material difference between our feeding intervals and those of Dr. Huenekens. We use five feedings in twenty-four hours for babies weighing 8 pounds or more; six feedings for those weighing from 6½ to 8 pounds; seven for those from 5 to 6½ pounds, and eight feedings for babies under 5 pounds. However, my paper as written does not discuss frequency of feeding but rather frequency of emptying the breasts. To increase the flow of milk, as in reestablishment and development cases, each breast must be emptied at least five times a day. We have found this adequate to produce streams of milk from mothers of adopted babies. Regarding the mother's diet, we do not believe in the ultimatum of a quart of milk a day any more than we demand a head of cabbage or a loaf of bread daily. Even in feeding rats, the various food elements are apportioned on a percentage basis. Are not lactating women as deserving of a balanced diet? If milk causes trouble, such as constipation, why not omit it entirely? Surely, no one longer believes that milk makes milk any more than other foods do. Meat is a rich source of the

milk-producing amino-acids. This, with succulent vegetables, fruits and whole grain cereals and breads constitutes a natural, normal diet. As to rest, daytime naps are invaluable for a nursing mother. The same principle applies as in golf. Walter Hagen aptly says, "two minutes' rest at each hole is better than two hours after the eighteenth." Time forbids discussion of all the questions raised. However, we have just begun the study of maternal feeding. Have we not been straining at the gnat of breast feeding while swallowing the camel of artificial feeding? In the not distant future we shall look back and marvel at our present ignorance of this fundamental subject.

DR. J. V. GREENEBAUM, Cincinnati: I hope that at a future meeting some other workers will present studies on the effect of diet throughout pregnancy and lactation in the same manner as we did. I congratulate Dr. Turner on his results in preventing rickets by giving the mothers raw vegetables. We also gave these women raw as well as cooked vegetables. We saw that they ate them, and we demonstrated their proper preparation. However, we were not able in the last three or four months of pregnancy to prevent the development of rickets by these methods. We were not able to follow the weights of these mothers because we did most of the work by home visits. The mothers rarely came to the clinic. They were in good condition; in fact, they were in better condition during this pregnancy than they were during previous pregnancies. As the protocols showed, many of them had had as many as ten pregnancies. Although these babies were weighed and found to gain in a normal manner, no relation of weight to the development of rickets was made out in this series. In answer to Dr. Schlutz' question in regard to the reasonable tide of blood phosphorus, we were able to examine the blood of these babies only at infrequent intervals. The blood phosphorus throughout the winter and summer periods was low in the babies and normal in the mothers. The babies were given the usual care and supervised by the Babies' Milk Fund Association. No special efforts were made to put the babies in the sunlight. We noted that the babies were usually in the house whenever visits were made. We know that they did not get any more sunlight exposures than the usual run of babies in the dispensary. As I mentioned, 100 per cent of our control group that we actually tried to influence to be taken into the sunlight, and to receive cod liver oil, developed rickets. I recall a reference I made to Dr. DeBuys' paper in which he found that 100 per cent of the breast fed babies in his study developed rickets, and also the reference that I made to Dr. Elliot's work in which she found that 86 per cent developed rickets. The latter noted the number of hours that the children were in the sunlight, also the amount of cod liver oil, so that the light and the cod liver oil apparently had not much better results than our three months' dietary regulation previous to the birth of the child. I would emphasize again that in our experimental group severe rickets developed only in those infants with whose mothers it was not possible to bring the diet up to reasonable standards.

Establish Centers of Scientific Medicine.—Adequate medical statesmanship will create and sustain centers of training, research and assistance for the reason that the very existence of such centers of scientific medicine will give to the whole medical profession of a state and to its clientele a psychologic sense of assurance that any emergency may be met without their having to cross the continent—all these centers developed as supplements to, not substitutes for, the practicing medical profession of the state. I believe that if the medical profession of any state boldly and aggressively fosters a program, first, of education among patients inducing them to look to doctors primarily for the care of health rather than for the cure of disease, and, secondly, of cordial and constant cooperation with the schools and hospitals in which the finest fruits of scientific research are made available, then two results are inevitable: First, both the prestige and prosperity of the medical profession throughout the state will be increased. Second, the medical profession will itself have met, by its own statesmanship, a vast social issue which, in the absence of such medical statesmanship, will inevitably be taken in hand by industries, insurance companies, and states. —Frank, Glenn: *Wisconsin M. J.* **25**:536 (Nov.) 1926.

PNEUMONIA FROM A PUBLIC HEALTH POINT OF VIEW

WITH ESPECIAL REFERENCE TO PNEUMONIA QUARANTINE *

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The control of the morbidity and mortality of pneumonia in the United States is admittedly a major public health problem. Scientific medicine has been unable to clear up satisfactorily many laboratory, climatic, personal, infectious and environmental problems in its study of this disease. Preventive medicine has made no previous attempt at control of the disease, so that a paper advocating quarantine for pneumonia must necessarily consider the opinions of physicians in all aspects of the problem that have not been scientifically established.

Since pneumonia may be caused by any one or combination of a number of pathogenic organisms, which grow, multiply and set up an inflammatory reaction in lung tissue, it should be considered as a closely related group of acute, constitutional diseases, all having in common, as a local manifestation, an acute, inflammatory process in the lungs.

TABLE 1.—*Deaths in 1924*

	Number
Smallpox	900
Infantile paralysis	1,128
Scarlet fever	3,109
Typhoid	7,212
Measles	8,370
Whooping cough	8,385
Diphtheria	9,756
Pneumonia	108,700

Pneumonia is one of the oldest diseases of which we have authentic medical history. During the Grecian era, Hippocrates wrote specifically on peripneumonia, its symptoms and his experience that cold, northerly winds seemed to be a cause of disorders of the breast; and Galen refers to peripneumonias and pleurisies. The contagiousness of pneumonia seems to have been recognized as early as 1497 by Savonarola of Venice. The Englishman Dunns, in 1592, wrote that peripneumonia is a contagious disease because he observed that it attacked many in the same family.

Pneumonia is endemic practically everywhere in the world, temperate and tropical countries suffering at all times from pneumonia, though not all countries to the same degree. The virulence of endemic pneumonia is not the same in all countries or in all parts of a country, nor is it the same in every year. Pneumonia is a seasonal disease; the morbidity usually increases in all countries in the cold or wet seasons. Vaughan and Palmer call attention to the fact that respiratory disease is more common in urban than in rural communities, pneumonia deaths in cities being about 50 per cent greater than in rural districts.

In the United States, pneumonia ranks first in the list of acute, communicable diseases as a cause of death. Table 1 will help visualize the importance of pneumonia in this respect; it is taken from the United States Public Health Service report of Jan. 1, 1926, covering the total number of deaths in 1924, of certain com-

* Read before the Lackawanna County Medical Society, Scranton, Pa., Nov. 16, 1926.

municable diseases; not all returns in this report are complete for the entire death registration area, but all include returns from 100,000,000 population or over.

Vaughan [1] states that "all students of epidemiology recognize that the pneumonias are infectious diseases, and they are disseminated by spitting, sneezing and coughing."

Rosenau [2] states that "lobar pneumonia is a communicable disease which should be classified with the infectious fevers."

These statements of Drs. Vaughan and Rosenau are correct, and are accepted by the great majority of the medical profession. However, there are many unknown laboratory, infectious, environmental, personal and climatic factors regarding the epidemiology of this group of diseases; also, there are statistical factors that make comparative study difficult; but, in public health administration, many problems that are not completely and scientifically worked out must be met and acted on in the most practical manner—one which, in the opinion of the responsible official, will produce the most beneficial result. .

Pneumonia is just such a problem. It has been aptly termed "the captain of the men of death"; it is well known in one respect because of its great prevalence and high case mortality, but is imperfectly known, as far as its causes, its prevention and its cure are concerned. Our case mortality percentage remains much as it was many years ago, and the total number of deaths from pneumonia has probably increased. From a public health point of view, it really makes little difference whether or not a case is lobar pneumonia or bronchopneumonia, primary or secondary or due to pneumococci, streptococci or any other pathogenic organisms, as in all cases these organisms are being continuously thrown out by the sick person, principally by coughing, sneezing and spitting. When they reach the body of any well person, by either direct or indirect contact, they are capable of causing that person to become sick in the same manner, and frequently do. Notwithstanding our lack of knowledge regarding many probable factors in the epidemiology of pneumonia, sufficient data have been accumulated to warrant one definite step in control of this group of diseases; namely, isolation of the patient and a modified quarantine of the premises.

This step is beneficial in the prevention not only of primary pneumonia infections due to direct and close indirect contact with a primary pneumonia patient, but also of the preceding infectious condition that terminated in a case of pneumonia, when this is the situation in a pneumonia patient.

Many members of the medical profession have heretofore not considered the pneumonias infectious diseases, the nature of which would warrant their being classified with the well known infectious disease group; but the thought that direct contact or close indirect contact with a case of pneumonia, producing an infection, is of comparative rarity may be because no very close check-up on a large group of cases has been made. Also, a person with good resistance may partially throw off an infection received by him from a pneumonia patient, and the infection he receives not produce in him a typical pneumonia but an upper respiratory tract infectious condition with or without a bronchitis, susceptible of transmission to another person with less resistance, who, in turn, would suffer a more serious illness.

Many secondary cases of pneumonia occurring in a household have been reported to and investigated by the physicians of the Pittsburgh department of public health. During March, 1924, which was the month preceding the inauguration of isolation and quarantine in pneumonia in Pittsburgh, twenty-two multiple deaths in households, due to pneumonia, one death following closely on another, were investigated. In many of these cases no laboratory data were available, but as far as possible the intimate, direct contact of a well person with one sick with pneumonia, who in turn became ill with pneumonia within a few days, was completely authenticated. In some cases, the pneumococcus type of organism was identified in the original case and in the second case, as is instanced in the following investigation of one of our recent cases of multiple deaths in a household from pneumonia, investigated by Dr. Marks, a physician associated with the department of public health:

Howard Gallagher, aged 21: onset, July 31, 1926; died August 11.

James Gallagher, aged 24: onset, Aug. 13, 1926; died, August 17.

Howard Gallagher had scarlet fever from April 10 to May 10, and then went to Atlantic City, where he remained for ten weeks. He came home, July 29, in perfect health, driving over in a machine. Two days later (July 31) he was seized with sharp pain in the right shoulder, which developed into pneumonia. He was removed to the St. Francis Hospital, August 3, where a diagnosis of lobar pneumonia was made due to the type 2 pneumococcus.

His brother James was in constant attendance until Howard died, August 11. On the day of the funeral (August 13), James complained of pain in the right shoulder, developed pneumonia, and died, August 17. The pneumonia was due to the type 2 pneumococcus, the same as his brother's.

IMPORTANT CONSIDERATIONS IN QUARANTINE OF PNEUMONIA

Riesman,[3] in discussing the question of the advisability of isolation and quarantine in pneumonia, stresses three important considerations:

In the past, we have attacked pneumonia from the standpoint of the individual, just as we have attacked—and with about as much success—the common cold. We have looked for medicinal specifics, for prophylactic vaccines, for therapeutic serums, and yet, though all these efforts are deserving of praise, pneumonia is almost as devastating a disease as it was before they were begun. Let us see whether the position that pneumonia should be a quarantinable disease is well taken.

We can get a clearer answer to this question if we consider the reasons in the past that have deterred physicians from considering the disease one that can be influenced by quarantine.

Pneumonia seems in many instances to begin explosively (after a wetting or chilling), suggesting that it is an autogenous and not a heterogenous infection. When, however, we study carefully the history of pneumonia patients, we find that many had a slight, preliminary, neglected cold. This was found to be true by the Philadelphia Pneumonia Commission, and is my personal experience in private and hospital practice. Therefore, the hypothesis that the abrupt onset militates against infection from another source is very much open to question.

The second reason that made men doubt the transmissibility of pneumonia is the rarity of contact infection. That point too has lost much of its force. In the first place, contact infection occurs though it may not be frequent. The other day, I was informed of a pathetic instance in one of the seashore towns of New Jersey. A physician fell ill with

1. Vaughan, V. C.: Epidemiology and Public Health, **1**, 1922.
2. Rosenau, M. J.: Preventive Medicine and Hygiene, 1922.
3. Riesman, David, in discussion before the Philadelphia County Medical Society, Sept. 22, 1926.

pneumonia. His son, a student in a New England college, was called home. The father died, and, within a few days the son also died of pneumonia. Every practicing physician can recall in his own experience double or triple cases in the same household. Dr. James M. Anders, in his study of pneumonia in Philadelphia, found the highest death rate in the most densely populated parts. Dr. Frederick T. Lord has collected a number of other examples of indubitable contact infection.

We may also answer the objection with regard to contact infection by an analogy. Tuberculosis was looked on until our own time as an hereditary but not a contagious disease. Only after Dr. Flick had published his epoch making researches on tuberculous houses did the contagiousness of the disease, and the fact that tuberculosis in a given individual invariably harks back to some other tuberculous individual, gain general acceptance. And yet, actual contact infection in sanatoriums or hospitals is not common; otherwise, the contagion theory would not have had to fight its way.

The third reason that has delayed the institution of quarantine in pneumonia is the prevailing belief that the pneumococcus is a more or less constant inhabitant of the human mouth. If this were the case, then quarantine could serve no useful purpose. But is it the case? I think bacteriologists are now generally agreed that the pneumococcus found in healthy persons is nearly always a nonvirulent micro-organism or one possessing but slight virulence. The highly virulent types, those responsible for the majority of the cases of pneumonia, are found only in the pneumonic patient or in the occasional carrier, an individual who has either recently recovered from pneumonia or has been in close contact with a pneumonia patient. That is the view of such distinguished authorities as Park and Williams[4] and of Bigger[5] of Dublin. The latter expresses the unequivocal opinion that pneumonia is transmitted usually from a definite case of pneumonia or sometimes from a healthy carrier previously in contact with a pneumonia patient.

One other point of importance should be mentioned, since it has a bearing on the obscure problems of pneumonia transmission. The pneumococcus is a fairly tenacious organism. In sputum attached to clothes and not exposed to direct sunlight, it may retain its virulence as long as fifty-five days. Direct contact is therefore not essential, since transmission can be brought about by surviving germs whose presence and source may not be suspected.

Perhaps there is also conveyance through nonhuman sources, through animals, milk, etc. While little is known about this, it is a point deserving investigation. It should furthermore be remembered that the pneumococcus is responsible for many cases of simple bronchitis, and might gain in virulence in its passage through the bronchitic patient.

When we consider the facts I have mentioned, we cannot help giving our adhesion to the proposal for a modified quarantine in pneumonia. It is a logical procedure, based on those epidemiologic grounds that have guided us toward quarantine in other infectious diseases.

PNEUMONIA QUARANTINE IN PITTSBURGH

In inaugurating isolation and quarantine of all forms of pneumonia in Pittsburgh, April 1, 1924, it was appreciated that no more can be expected from quarantine in pneumonia than from quarantine in other communicable diseases such as scarlet fever and diphtheria. While house quarantine alone is not capable of completely eradicating any of the acute communicable diseases, it is of great value in preventing many persons from becoming sick who otherwise would have contracted the disease.

Pneumonia quarantine was begun in Pittsburgh for the following reasons:

1. Rightly or wrongly, Pittsburgh was charged in 1923 with having the highest pneumonia death rate of any city in the United States.

4. Park and Williams: Pathogenic Micro-Organisms, Philadelphia, 1924.

5. Bigger: Handbook of Bacteriology, London, 1925.

The Department of Commerce, Washington, D. C., in a report dated Jan. 12, 1924, covering pneumonia deaths for 1923 in seventy-two American cities, gave Pittsburgh the highest rate of 371 per hundred thousand, this being about three times the rate for the United States as a whole.

I appreciate the technical, statistical questions involved in comparative figures for cities, and that differences in reports of cause of death in different parts of the country, together with differences in compilation of statistical data might and might not give to Pittsburgh a better standing in this respect. However, as is indicated in table 2, covering deaths from pneumonia for thirteen years, this disease has been prevalent and fatal in Pittsburgh, with a great yearly increase in deaths from 1913 to 1923. Whatever the true comparative rate may be, the pneumonia problem was of sufficient importance to merit serious consideration.

TABLE 2.—*Deaths from All Forms of Pneumonia in Pittsburgh for Thirteen Years*

Year	Number	Year	Number	Year	Number
1913	1,743	1918	3,966	1922	1,732
1914	1,360	1919	1,933	1923	2,295
1915	1,420	1920	2,249	1924	2,074
1916	1,977	1921	1,730	1925	1,688
1917	2,081				

2. In preventive medicine, practically nothing had been done in an attempt to reduce the morbidity from pneumonia. If the pneumonias were infectious diseases, isolation and quarantine should produce as beneficial results in the lowering of the morbidity and mortality rate of this group of diseases as had been done by house quarantine in other infectious disease.

3. A complete plan of isolation and quarantine was submitted for criticism to the Allegheny County Medical Society and the Allegheny County Homeopathic Medical Society, and its Committee on Public Relations, with indorsement from each.

In Pittsburgh, the regulation covering reports of cases of pneumonia was made all inclusive in order to avoid any loophole for failure to report a case. The regulation follows: "Pneumonias (all forms) are reportable diseases in the city of Pittsburgh; specify (*a*) lobar pneumonia; (*b*) bronchopneumonia; (*c*) pneumonia complicating influenza; (*d*) pneumonia complicating other communicable diseases; (*e*) all other pneumonias, as traumatic, anesthetic, senile, etc.; specify whether lobar pneumonia or bronchopneumonia in all of the above primary conditions."

Actual quarantine in certain types of cases is optional with the department of public health; also the quarantine regulation is a modified quarantine, as follows: "Modified quarantine will be enforced in all cases of pneumonia, except that under the classification *e* ('all other pneumonias, as traumatic, anesthetic, senile, etc.') may be quarantined at the option of the department of public health. This modified quarantine will consist of placarding, isolation of the patient, prohibition of all visitors, but no restrictions on other members of the household, including school children, provided isolation is complete and instructions from the department of public health are properly carried out. No minimum number of quarantine days specified, the quarantine period being until recovery or death of patient."

Complete sanitary cleaning of the premises is required before release, but, when this is accomplished

thoroughly following the physician's report of recovery, quarantine release is made at once. In a fatal case, after sanitary cleaning, no funeral restrictions are made. Regulations governing pneumococcus carriers or laboratory release regulations were not incorporated. This may be a desirable later step, but at present, because of the apparently beneficial effect in reducing the number of cases and deaths from pneumonia and the complete approval accorded the regulation by the physicians, hospitals and citizens of Pittsburgh, the present pneumonia quarantine regulations have been satisfactory and will continue indefinitely.

COMMENT

While the regulation covering isolation and quarantine of the patient in all cases of pneumonia is of itself a valuable aid in preventing many cases of pneumonia, this is not the only reason for the regulation. It is an essential first step in a program of pneumonia control. The second step will be to arouse interest in the general public and the medical profession regarding the subject of pneumonia prevention. This is important, as it is just as true in problems of preventive medicine as it is of all general community problems that the public must have some understanding and interest and a desire to support, in order to carry through successfully any important public program.

The third step is organized study in centers of population of the now unknown items in the epidemiology of pneumonia, so that all preventive measures may be inaugurated that are found to be beneficial. Unless a community knows the number, the time and the place of its pneumonia cases, it is not in a position to make a proper study of the subject. Unless the first two steps in this plan of pneumonia control are properly worked out (for very practical reasons), a true knowledge of the number, time and place of its pneumonia cases is not obtainable in any community.

The study of the now unknown items in the epidemiology of pneumonia should be conducted on a large scale, as a community effort, with the interest of physicians and laymen centered on the problem. It should be thoroughly scientific and placed in the hands of qualified trained employees, who are committed to this study as their chief interest, and these employees should work in close cooperation with hospitals, civic organizations, the medical profession, laboratories and the department of public health.

The study should attempt to clear up all of the now unknown environmental, climatic, infectious, personal and statistical factors in the problem, and, as will be seen, it has two very distinct lines of study: (1) the medical side and (2) the engineering side.

Each of the lines of study has many interesting items, but, as an illustration of the scope of the work, one item will be considered in each.

1. On the medical side: What is the true relationship between the common cold and pneumonia; also, what is a common cold, and what, if any, is its relation to influenza or so-called grip? The United States Public Health Service has been conducting for several years a study of the common cold, and one of its preliminary reports states that in the United States the average number of common colds per person annually is more than three; also, that there seems to be a much closer relationship between common colds and influenza than we have heretofore thought to exist. In Pittsburgh, the city nurses obtain some information relative to the case history in all pneumonia patients treated in their homes, and, during our thirty-one months of pneumonia quarantine, 5,277 cases were so investigated. Of these cases, 3,808, or 72 per cent, did have a history of a preceding common cold or so-called grip; and in 1,469 cases, or 28 per cent, no such history was obtained, indicating that the latter cases are primary pneumonias. (No cases are included in this group in which the attending physician made a diagnosis of influenza as the primary disease.)

TABLE 3.—*Result of Pneumonia Quarantine*

	Number	Death Rate per 100,000
Death from pneumonia (all forms) in 1923 (last year of no quarantine)	2,295	371
Deaths from pneumonia (all forms) in 1924 (quarantine last nine months)	2,074	331
Deaths from pneumonia (all forms) in 1925 (first full year of quarantine)	1,688	264

However, the city nurse is unable to make as careful a check on the case history as would be done by employees committed to a study of this kind as their chief interest; therefore, it is probable that the percentage of preceding colds, or so-called grip, in pneumonia patients would be greater than indicated by the reports of the city nurse.

2. On the engineering side: What is the relationship, if any, between air pollution and pneumonia?

Vaughan and Palmer inform us that the percentage of pneumonia deaths in cities is about 50 per cent greater than in country districts. Air pollution has long been suspected as a predisposing factor in diseases of the respiratory tract. Very little scientific work on the problem of air pollution has ever been done in any city in the world, but the Mellon Institute for Industrial Research, by Mr. H. B. Meller, a fellow of the institute, did conduct an investigation on air pollution in Pittsburgh in 1912 and in 1924. In a preliminary report issued by the Mellon Institute in 1924, it is shown that there has been a diminution in smoke in Pittsburgh in the last twelve years of more than 60 per cent; but there is an annual deposit per square mile of 1,400 tons of insoluble ash, this being composed largely of sharp-cornered particles of coke and other material, and, in addition, there are large quantities of soluble matter and irritating gases and acids.

TABLE 4.—*Total Deaths from All Forms of Pneumonia*

	1924	1925	Decrease No.	Decrease %	Increase No.	Increase %
Cleveland	1,090	1,064	26	2.4	...	....
San Francisco	708	685	23	3.2	...	....
St. Louis	1.431	1,369	62	4.3	...	....
Philadelphia	2,864	2,651	213	7.4	...	....
New York	9,152	8,397	755	8.2	...	....
Denver	541	485	56	10.3	...	....
Pittsburgh	2,074	1,688	386	18.6	...	....
Washington, D. C.	741	593	148	20.0	...	....
Detroit	1,521	1,572	...	....	51	3.3
Chicago	2,892	3,075	...	....	183	6.3
Baltimore	1,433	1,538	...	....	105	7.3
Indianapolis	425	456	...	....	31	7.3
Minneapolis	340	384	...	....	44	13.0
Newark, N. J.	515	584	...	....	69	13.4
Boston	1,024	1,181	...	....	157	15.3
Cincinnati	485	573	...	....	88	18.1
New Orleans	495	635	...	....	140	28.2
Buffalo	509	690	...	....	181	35.5
Milwaukee	521	717	...	....	196	37.6

The situation is in no way peculiar to Pittsburgh, but must obtain in all centers of population where coal is used as fuel, and a true knowledge of the problem of air pollution, together with its relationship to pneumonia and other conditions of the respiratory tract, is

one item that should be cleared up in a thorough and complete study of the epidemiology of pneumonia. Air pollution in centers of population is a great factor in the public health, and some day modern cities may be as solicitous about a reasonably pure air supply as they now are deeply interested in a reasonably pure water supply.

RESULTS

The pneumonia mortality statistical summary given in table 3 for the thirty-one months' pneumonia quarantine period in Pittsburgh indicates a marked improvement in the pneumonia situation.

This is a reduction of 607 pneumonia deaths, or about 26.5 per cent, for the first full year of quarantine, 1925, as compared with 1923, the last year of no quarantine.

It may be true that pneumonia in the United States in 1925 did not claim so many lives as in 1923 or 1924, but table 4, giving the pneumonia deaths in 1925, compared with 1924, in eighteen other American cities of 300,000 or over, shows a decrease in seven cities and an increase in eleven cities, three of these showing an increase of more than 25 per cent in pneumonia deaths.

The two cities in table 4 showing the greatest decrease are Pittsburgh, with 18.6 per cent, and Washington, D. C., with 20 per cent, both of which quarantine in all forms of pneumonia.

All of the eleven cities showing increase in pneumonia deaths, ranging from 3.3 to 37.6 per cent increase, do not quarantine in all forms of pneumonia.

TABLE 5.—*Deaths for Same Period Each Year*

	Total Pneumonia Deaths	Rate per 100,000
Jan. 1 to Nov. 1, 1923	1,933	319
Jan. 1 to Nov. 1, 1924	1,768	282
Jan. 1 to Nov. 1, 1925	1,409	223
Jan. 1 to Nov. 1, 1926	1,070	168

The statistical bulletin of the Metropolitan Life Insurance Company of July, 1926, states that "health conditions among the wage-earning population of the United States and Canada during the first half of 1926 were not only less favorable than for the same period of last year, but of any year since 1920." The increased mortality in the first six months of 1926 was due, for the most part, to the above-average prevalence of influenza and pneumonia.

This is contrary to our experience in Pittsburgh, as, during the first ten months of 1926, there has been a further decline in pneumonia deaths in Pittsburgh, and the four year tabulation (table 5) for the same period each year shows a steady reduction in pneumonia deaths.

Pittsburgh's attempt at pneumonia control is responsible, in part, at least, for the reduction in pneumonia deaths, as indicated in the tabulations; however, a decade of pneumonia quarantine experience must be available before definite conclusions can be arrived at, though the first thirty-two months' experience is encouraging and fully warrants a continuation of this first step in an attack on the pneumonias.

The second step is being covered satisfactorily in Pittsburgh, and the general public and medical profession are being kept fully informed regarding this subject. There has not been a single complaint regarding the pneumonia quarantine regulation by either a lay citizen or a physician since it was put into effect, April 1, 1924; on the other hand, many commendatory letters have been received by the department of public health from hospitals, physicians, lay citizens and civic organizations, all indicating endorsement of the plan and willingness to cooperate.

The third step has not been satisfactorily worked out in Pittsburgh; some progress has been made, however, and it is hoped that this winter will witness the formation of a large group of citizens willing and able to carry through successfully a complete and scientific study of the epidemiology of pneumonia.

OXYGEN LACK AND CARDIAC OUTPUT

SOME CLINICAL CONSIDERATIONS *

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As one of the chief functions of the circulation is to supply oxygen to the tissues, the effects of deficiencies in the oxygenation and the oxygen carrying power of the blood on the rate of circulation in the body are of some importance. This is particularly true because many patients present phenomena due to alterations in the amount of hemoglobin or in the degree of oxygenation of hemoglobin.

Studies concerning the effects of hemorrhage, anemia and anoxemia on the minute cardiac output of dogs have recently been made by us. The methods employed and the detailed results as well as the previous work bearing on these observations and the physiologic significance of the observations are reported elsewhere.[1] The purpose of this paper is to consider the clinical application of the experiments, and only such data are presented as seem necessary for this purpose.

One feature worthy of emphasis is that these observations were made on healthy dogs, which had been subjected to no surgical procedure other than drawing blood from the heart, and, in a few experiments, exposing the femoral vessels. Although many of the animals were narcotized with morphine, check experiments were done on trained unanesthetized dogs and similar results were found. Consequently, these observations may be considered as more applicable to human disease than results obtained on anesthetized animals after various operative procedures.

CARDIAC OUTPUT IN ANEMIA

It was found that chronic anemia, produced by successive small bleedings at from three to six day intervals, caused a marked increase in the output of the heart. The minute cardiac output was maximum when the hemoglobin was increasing after bleeding had been stopped, and it did not reach the preanemic level in the succeeding three or four months during which the animals were observed. These results are shown in table 1 and the chart.

These observations confirm those of Lilgestrand and Stenstrom,[2] who reported that the cardiac output was increased in anemic patients. Dautrebande [3] found no significant change until the hemoglobin approached 50 per cent, but a great increase at more severe grades

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1. Blalock, Alfred; and Harrison, T. R.: Am. J. Physiol., to be published. Harrison, T. R., and Blalock, Alfred: Ibid., to be published.
2. Lilgestrand, G., and Stenstrom, N.: Acta med. Skandinav. **63**: 130, 1925.
3. Dautrebande, L.: Compt. rend. Soc. de biol. **93**: 1029 (Oct.) 1925.

of anemia. Our experiments indicated that the degree of anemia necessary to increase the output of the heart varies according to the rapidity with which the anemia is produced. The observations in the anemic dogs have led to certain clinical considerations.

The examination of the circulatory system of patients with anemia reveals certain characteristic conditions. These are (*a*) moderate tachycardia; (*b*) increased intensity of the first sound at the cardiac apex and of the aortic and pulmonic second sounds; (*c*) apical and pulmonic systolic murmurs; (*d*) increased peripheral pulsations; (*e*) full bounding, and, at times, a collapsing radial pulse. It will be noted that these phenomena are also present in patients with hyperthyroidism, a condition in which the cardiac output is increased.[4] Similar signs are seen in pneumonia. We[5] have demonstrated increased cardiac output in dogs with this disease. It seems likely that this group of physical signs, when occurring in patients without evidence of hypertension or structural cardiac valvular disease, may be safely interpreted as indicating that the heart is pumping more than the normal amount of blood.

This compensatory increase in the cardiac output is not without its disadvantages, as the overworked heart may finally succumb to the strain of prolonged increased work. Such an event is the usual story in severe hyperthyroidism, and patients dying of long-standing anemia commonly show evidence of acute circulatory failure. These conceptions emphasize the importance of transfusion, and indicate that relatively mild and common degrees of anemia should be regarded as at least a contributory factor in the production of circulatory failure, and treated accordingly.

When transfusion is not done, digitalis in full doses should be administered, and the patient should be kept under the influence of this drug as long as the anemia persists. Harrison and Leonard[6] have shown that digitalis is a cardiac sedative, as it decreases the output of the heart of dogs, and probably exerts a similar effect in man. The same observers found that digitalis

TABLE 1.—*Effects of Anemia on Cardiac Output*

Animal No.	Control Studies Before Bleeding		At Time of Greatest Anemia		One Month After Cessation of Bleeding		Two Months After Cessation of Bleeding	
	Hemoglobin, per Cent	Minute Cardiac Output, Cc.	Hemoglobin, per Cent	Minute Cardiac Output, Cc.	Hemoglobin, per Cent	Minute Cardiac Output, Cc.	Hemoglobin, per Cent	Minute Cardiac Output, Cc.
1 (V21).....	111	863	36	2,097	51	3,196	59	2,402
2 (V19).....	93	926	26	1,347	..	.....	..	.....
3 (V32).....	123	821	49	1,331	66	1,479	72	1,711
4.....	61	1,087	37	1,676	48	1,186	59	1,922

decreased the cardiac output of a dog with anemia. There is, therefore, a rational basis for using digitalis in overactive hearts to prevent cardiac insufficiency, although the drug is rarely employed in this connection.

CARDIAC OUTPUT AFTER HEMORRHAGE

Two series of experiments were done, as follows: Blood, amounting to 1 per cent of the body weight, was withdrawn every two hours until four bleedings had been done. In one group of animals the blood volume was not restored, whereas in a second group the blood withdrawn was immediately replaced by an equal volume of physiologic sodium chloride solution. The blood volume was decreased in the first group and relatively little change in hemoglobin concentration was produced, whereas in the second group the alterations in the blood volume were less and the change in hemoglobin greater. The cardiac output was determined immediately before each bleeding and two hours after the last bleeding.

TABLE 2.—*Effect on Cardiac Output of Hemorrhage With and Without Replacement of Blood Volume*

Experimental Procedure	Control Period		After Loss of Blood Amounting to: One per Cent of Body Weight		Two per Cent of Body Weight		Three per Cent of Body Weight		Four per Cent of Body Weight	
	Hemoglobin, per Cent	Cardiac Output per Min. per Kg., Cc.	Hemoglobin, per Cent	Cardiac Output per Min. per Kg., Cc.	Hemoglobin, per Cent	Cardiac Output per Min. per Kg., Cc.	Hemoglobin, per Cent	Cardiac Output per Min. per Kg., Cc.	Hemoglobin, per Cent	Cardiac Output per Min. per Kg., Cc.
Bleeding without replacement.....	86	131	87	153	82	136	76	124	75	75
Bleeding and replacement by saline solution.....	97	118	96	116	84	249	82	172	76	100

The results are shown in table 2, and in order to make the figures for the two groups suitable for comparison, the cardiac output per minute is expressed in terms of cubic centimeters per kilogram of body weight. The figures represent average values, as space does not permit the publication of the complete protocols, which are given in detail elsewhere.[1]

The average diminution in hemoglobin in the animals that received no fluid was approximately 10 per cent. These dogs presented a slight preliminary rise in cardiac output after the first bleeding. After the second bleeding the cardiac output was normal. Following removal of blood for the third time the cardiac output was decreased, and after the fourth hemorrhage this decrease became very marked. The general condition of the animals was unchanged after the first two withdrawals of blood. After the third hemorrhage, signs suggestive of shock were manifest, and the dogs were in a typical state of severe shock after the fourth bleeding.

The general condition of the dogs that were given saline infusion was somewhat different. The average decrease in hemoglobin was 20 per cent, or about twice that of the other group. No signs of distress were noted until after the fourth bleeding, and at that time these animals appeared to be in a state of slight shock, apparently about as severe as that noted after the third bleeding in the dogs to which no fluid was given.

The output of the heart in the "replacement" experiments was unchanged after the first hemorrhage. Following the second and third bleedings, a marked increase occurred. After blood had been removed for the fourth time the output was less than normal, but the degree of decrease (16 per cent) was of considerably less magnitude than the degree of decrease (43 per cent) in the "nonreplacement" experiments.

On the basis of these results and the hypothesis that the hearts of man and dog are comparable, certain conclusions in regard to the treatment of hemorrhage may be drawn.

After severe hemorrhage, and in shock from other causes, the following phenomena are noted: (*a*) Dusky,

4. Davies, H. W.; Meakins, J., and Sands, J.: Heart **11**: 299, 1924. Robinson, G. C., and Burwell, C. S.: Personal communication to the authors. Odaira, T.: Tohoku J. Exper. Med. **6**: 325 (Sept.) 1925. Blalock, Alfred; and Harrison, T. R.: Surg. Gynec. Obst., to be published.

5. Harrison, T. R., and Blalock, Alfred: J. Clin. Investigation **2**: 435, 1926.

6. Harrison, T. R., and Leonard, B. W.: J. Clin. Investigation **3**: 1, 1926.

ashen, or blue-gray pallor of the skin. (*b*) Mental stupor, with or without physical restlessness. (*c*) Alterations in the rate and depth of breathing, which may be of the "air-hunger" type or rapid and shallow. Apnea of short duration is occasionally seen, but rhythmic periodicity of the Cheyne-Stokes variety is uncommon. (*d*) Diminished intensity of the heart sounds. (*e*) Very rapid "thready" pulse or absent pulse. (*f*) Diminution in systolic blood pressure. (*g*) Subnormal body temperature in severe cases.

TABLE 3.—*Cardiac Output During Recovery from Hemorrhage*

Animal No.	Control Period		Five Hours After Final Hemorrhage		Two to Four Weeks After Final Hemorrhage	
	Hemoglobin, per Cent	Cardiac Output per Min., Cc.	Hemoglobin, per Cent	Cardiac Output per Min., Cc.	Hemoglobin, per Cent	Cardiac Output per Min., Cc.
V37.....	97	1,497	86	644	69	3,592
V38.....	75	734	64	630	44	2,100
V39.....	107	955	83	790	86	1,424

It is altogether likely that this group of physical signs always denotes a decreased cardiac output, which is probably the immediate cause of their appearance. Such signs after a severe hemorrhage constitute, as is well known, an urgent indication for immediate transfusion. If this procedure, for any reason, cannot be carried out, the usual practice of giving fluids in large amount is indicated, as shock is less severe when the blood volume is maintained.

When this group of physical signs is present, digitalis should not be given, as the drug, if administered in effective doses, will decrease the output of the heart [6] and aggravate the condition. This point is worthy of considerable emphasis, as digitalis and allied drugs are often given for their supposed cardiac stimulative effect in states of shock.

TABLE 4.—*Effect of Anoxemia on Cardiac Output*

Date	Animal No.	Control Period: Oxygen Saturation of Arterial Blood, per Cent	Control Period: Cardiac Output per Minute, Cc.	Anoxemic Period: Oxygen Saturation of Arterial Blood, per Cent	Anoxemic Period: Cardiac Output per Minute, Cc.	Narcotic Used
2/11/26	V27	94.4	759	28.9	3,078	Morphine
2/13/26	V28	94.1	976	34.3	3,298	Morphine
2/13/26	V28	97.2	1,017	38.4	2,230	Morphine
2/15/26	V29	90.5	633	11.4	1,786	Morphine
2/18/26	V30	90.3	1,116	21.0	2,035	Morphine
2/25/26	V33	91.3	1,161	7.2	3,353	Morphine
3/12/26	V35	98.9	726	9.9	4,511	Morphine
3/12/26	V35	100.0	565	2.9	4,640	Morphine
4/13/26	A2	94.8	2,615	30.7	3,183	Morphine
5/23/26	V17	94.0	1,901	46.4	2,004	Morphine
3/2 /26	A1	96.3	2,061	49.7	3,088	None
4/19/26	V16	95.4	2,566	17.0	9,940	None
4/19/26	V16	93.8	1,805	61.6	7,993	None
4/20/26	V18	94.3	2,345	66.9	4,032	None
4/29/26	V18	95.0	2,209	22.6	3,275	None
5/25/26	V16	95.0	2,708	68.0	2,889	None

Recovery from severe hemorrhage was studied in several dogs, and the results are shown in table 3. When the animal survived the initial bleeding, the general condition changed within a few days from shock to anemia, and the cardiac output, which had been decreased at the end of the bleeding experiment, became greater than normal.

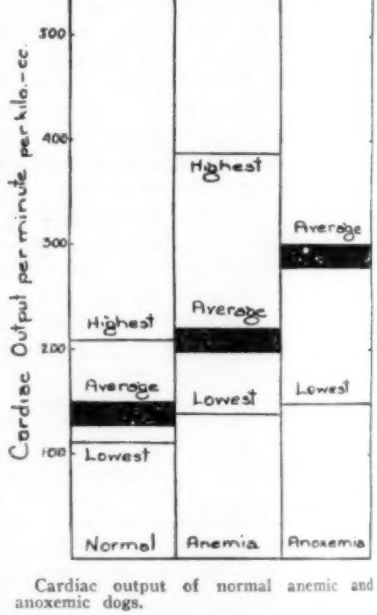
In patients who recover from a severe hemorrhage, the initial state of shock is gradually replaced by the clinical picture of anemia. Transfusion and digitalis are indicated in these persons for the reasons mentioned in the discussion of cardiac output in anemia.

CARDIAC OUTPUT DURING ANOXEMIA

Severe anoxemia of short duration was produced in a series of experiments on trained and morphinized dogs. The animals breathed in a closed circuit apparatus from which the carbon dioxide was absorbed. At the start the spirometer was filled with air, but as the experiment progressed, oxygen was consumed and the concentration of this gas in the breathing mixture steadily declined.

The cardiac output was determined before and during anoxemia. Severe anoxemia was found to be associated with an increased cardiac output in every instance, although the degree of increase was very variable. Values for the percentage saturation of the arterial blood with oxygen and for the cardiac output are shown in table 4.

In the chart, the highest, lowest and average figures for the cardiac output of normal dogs and of dogs with anemia and anoxemia are shown. For the sake of comparison, the values are expressed in terms of output per minute per kilogram of body weight.



Cardiac output of normal anemic and anoxemic dogs.

In anemic dogs the average cardiac output is as great as the highest cardiac output of normal animals, whereas in severe anoxemia the average cardiac output is twice as great as in normals.

The compensatory nature of these mechanisms may be made clear by the use of a rather obvious simile. The body tssues may be considered as a city that requires a fixed minimum of food (oxygen). The circulation is the electrical railroad system that transports this supply, each cubic centimeter of blood representing a motor and each red blood corpuscle a freight car, which is loaded at a rural terminus —the lungs. In anemia there is a shortage of freight cars; and since the number (blood volume) of motors is limited, each must travel faster and make more trips at the price of an increased strain on the power plant (heart). In anoxemia the system of loading is inefficient, so that each freight car carries an inadequate supply, and this also necessitates more trips by each car, which calls for more rapid transportation.

Respiration in the broader sense includes: (*a*) the supply of gases to the blood; (*b*) the gas carrying power of the blood, and (*c*) the circulation to the tissues. This work, as well as previous investigations on the effect of acidosis [7] and tracheal obstruction,[8] indi-

7. Harrison, T. R.; Wilson, C. P., and Blalock, Alfred: J. Clin. Investigation **1**: 547 (Aug.) 1925.

8. Blalock, Alfred; Harrison, T. R., and Wilson, C. P.: Partial Tracheal Obstruction, Arch. Surg. **13**: 81 (July) 1926.

cates that adjustments in the third factor—increased cardiac output—can compensate for deficiencies in function of either of the first two factors. This principle has been previously [8] stated in another way; i. e., the circulation constitutes the second line of defense against failure of tissue metabolism.

There may be danger, however, in compensation, and in any event efforts should be made to protect the heart from overstrain. Anoxemia due to defective pulmonary exchange is commonly encountered in pneumonia, lung abscess, bronchiectasis, lung tumor, asthmatic bronchitis and emphysema. Administration of oxygen over long periods of time in chronic diseases is not practical, but such administration can and should be employed in pneumonia with marked cyanosis. Oxygen probably does not affect the organism causing the disease, but the experimental data we are discussing suggest very definitely that oxygen given early and freely may prevent overwork of the heart and hence forestall circulatory collapse, thereby possibly "tiding the patient over" until immunity is established. In a previous investigation,[5] it has been demonstrated that the output of the heart is very much increased in pneumonia in the dog. The value of digitalis in pneumonia was discussed and it was pointed out that digitalis may be expected to do good if given early in pneumonia, but that it probably exerts a harmful action if administered when evidence of circulatory shock has become manifest.

The frequency of cardiac insufficiency in patients with chronic bronchitis and emphysema has long been known and has been attributed to increased resistance in the lesser circulation, resulting from fibrosis and cough. In this connection it may be pertinent to raise the question as to why patients with pulmonary tuberculosis do not develop myocardial weakness. Many tuberculous persons have fibrosis and cough to as great a degree as do patients with chronic bronchitis and emphysema. The answer may lie in the fact that cyanosis (which denotes anoxemia) is rare in patients with phthisis and common in patients with the other diseases. Possibly the chronic low-grade oxygen deficiency may lead to increased cardiac output for a long period of time, and hence the heart may become impaired from the strain.

These conceptions afford a sufficient reason for giving digitalis to patients who have chronic cyanosis of pulmonary origin. With the exception of rest, this and allied drugs constitute the only method at present known of diminishing the work of the heart.

SUMMARY

In unnarcotized dogs and those narcotized with morphine, the cardiac output is increased by anemia and anoxemia. On the assumption that this is also true in man, definite procedures should be employed to spare the heart. For this purpose early transfusion in anemia and early administration of oxygen in acute pulmonary disorders seem urgently indicated. In both of these conditions, as well as in chronic cyanosis of pulmonary origin, rest and digitalis should be employed for their sedative effect on the heart. While evidence of increased cardiac output exists, the patient should be kept under the influence of the drug, which must be discontinued if acute circulatory failure supervenes.

Acute hemorrhage causes no change in the cardiac output of dogs until blood amounting to about 3 per cent of the body weight has been lost, when the first signs of shock appear. Further loss of blood produces severe shock, with marked diminution in cardiac output. These untoward results can be partially, but not entirely, prevented by the administration of fluid. Digitalis should be withheld immediately after hemorrhage and should never be given when signs of shock are present. When the clinical picture of hemorrhage has changed to that of anemia, digitalis is indicated.

Cardiac failure in patients with chronic bronchitis and emphysema may be dependent on anoxemia and consequent overstrain of the heart.

LOW TEMPERATURE, HIGH BAROMETER AND SUDDEN DEATH *

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AND
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In a recent note in the *British Medical Journal*, "A. O. W." [1] called attention to an apparent concurrence between the incidence of sudden deaths and high barometric pressures. The point thus raised by a casual observer was taken up by Dr. Percy Stocks [2] of the University of London, who undertook a short statistical investigation on the alleged association of deaths from "heart failure" with high barometric readings. He correlated the weekly deaths registered in London, taking deaths from diseases of the heart and circulatory system, with the mean corrected barometric pressures for the same weeks at Greenwich. He used the data for the last week of October and the four weeks of November in each of the years 1900 to 1914 and 1919 to 1925, and found a coefficient of correlation of $+0.23 \pm 0.06$. Dr. Stocks interpreted this correlation as indicatory of an appreciable relation between the incidence of deaths from circulatory diseases and the atmospheric pressure.

It is well known that mortality from causes of death associated with the circulatory system is higher in the colder than in the warmer seasons of the year, and that a low temperature in November is frequently accompanied by a high barometer. Hence, it is conceivable that the apparent correlation between mortality and high barometer is more strictly a correlation between mortality and low temperature. Dr. Stocks found correlations of -0.44 ± 0.05 between mortality and mean temperature, and of -0.15 ± 0.06 between mean barometric pressure and mean temperature. He reported further:

> It follows, from these figures by partial correlation, that when the effect of temperature is eliminated mortality is still correlated with barometric pressure to the extent of 0.19 ± 0.06; that is to say, there does appear to be a small but significant relation between heart deaths and atmospheric pressure during November apart from the effects of temperature, a result which seems to confirm the opinion formed by "A. O. W."

It is apparent that the conclusions reached by Dr. Stocks are of considerable interest to the medical and public health world. Increasing cognizance is being given to the prevention of mortality from acute or chronic organic defects. It is important to know the true significance of meteorological conditions for the well being of the patient. We have undertaken a

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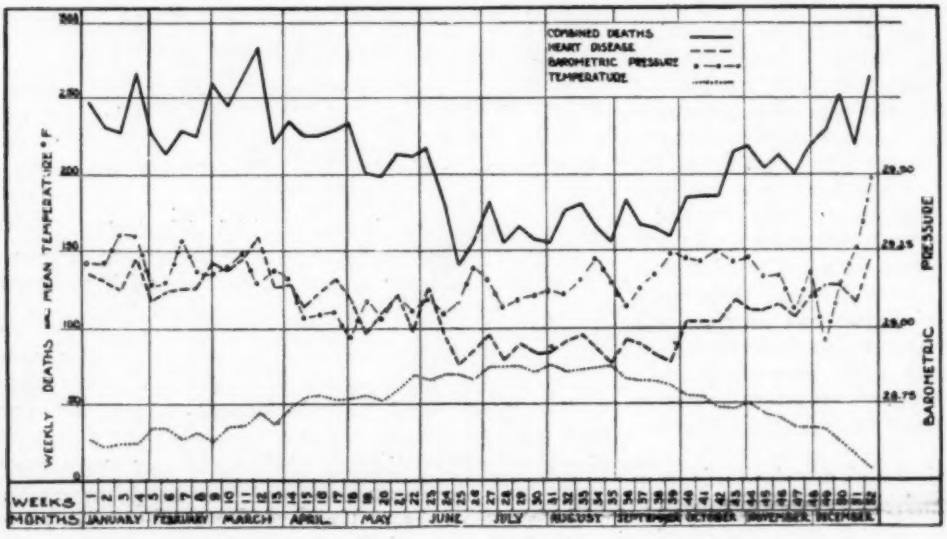
* From the Department of Health, City of Chicago, and the Department of Hygiene and Bacteriology, University of Chicago.

1. "A. O. W.": Brit. M. J. 2: 1098 (Dec. 5) 1925.
2. Stocks, Percy: Brit. M. J. 2: 1188 (Dec. 19) 1925.

reinvestigation of the problem, using the vital and weather statistics of Chicago for very recent years.

In the accompanying chart we have arranged a series of curves to show the seasonal variations in mortality from organic diseases of the heart or from organic diseases of the heart, cerebral hemorrhage and chronic nephritis combined, in mean weekly temperatures and in mean weekly barometric pressures. The data were derived from the records for the period January, 1924, to April, 1926.



Seasonal variations in mortality.

The curves show that mortality was high when temperature was low and vice versa. There is no clearly apparent correlation between fluctuations in mortality and in barometric pressure. We must turn to more refined statistical methods for a precise analysis of the data.

We present in table 1 a series of correlation coefficients which were calculated to determine the relations between deaths from organic diseases of the heart, and barometric pressure or mean temperature. The coefficients were calculated from the weekly deaths registered in Chicago, the mean weekly, corrected barometric pressures and the mean weekly temperatures in the years 1924 and 1925, respectively, and in the first thirteen weeks of 1926.

TABLE 1.—*Correlations Between Deaths from Organic Diseases of the Heart and Mean Barometric Pressures or Mean Temperatures* *

Coefficient	1924 (52 weeks) r ± P. E.	r/P. E.	1925 (52 weeks) r ± P. E.	r/P. E.	1926 (13 weeks) r ± P. E.	r/P. E.
$r_{1.2}$	+0.073 ± 0.093	0.78	+0.263 ± 0.087	3.0	+0.048 ± 0.187	0.25
$r_{1.3}$	−0.670 ± 0.052	12.9	−0.704 ± 0.047	15.0	+0.340 ± 0.166	2.0
$r_{2.3}$	−0.347 ± 0.082	4.2	−0.043 ± 0.093	0.46	−0.720 ± 0.090	8.0

* Subscript 1 indicates weekly deaths; 2, weekly mean barometric pressure; 3, weekly mean temperature.

The coefficients of correlation (r) and their probable errors (P. E.) were calculated by the procedures that are usually employed. It should be recalled that a value of 0.0 for r means that there is no correlation between the two sets of data; that a value of + 1.0 means perfect direct correlation, and a value of — 1.0 means perfect inverse correlation. The statistical significance of r is determined by its absolute value and by its relative value with respect to its probable error. Hence, in the tables the values of r ± P. E. are accompanied by the figures for the ratio r / P. E.

It appears from the data in table 1 that there was no significant correlation between deaths from organic heart disease and barometric pressure in 1924, and in the first thirteen weeks of 1926. There was a significant, direct relation in 1925 (+ 0.263 ± 0.087). In 1924 and in 1925, organic heart disease deaths were very significantly correlated inversely with temperature. The coefficients might be interpreted to mean that in certain periods high barometric pressures or low temperatures have been accompanied by high mortality from organic heart disease.

It should be noted in table 1 that in the 1924 and 1926 periods there were high, inverse correlations between barometric pressure and temperature. Thus, the coefficients $r_{2.3}$ for these periods were — 0.347 ± 0.082 and — 0.720 ± 0.090, respectively. The coefficient for 1925 (— 0.043 ± 0.093) was insignificant. The inverse correlations between pressure and temperature were significant in the periods in which mortality was not significantly correlated with pressure; and were not significant in the only one of the three periods studied (1925) in which a significant correlation between mortality and pressure was found.

It was considered of interest to determine whether the same or similar results would be obtained if the correlations were computed for mortality from a larger body of data, including certain other causes of death that might be influenced by weather conditions. To this end, weekly deaths from organic diseases of the heart were summed with weekly deaths from cerebral hemorrhage and from chronic nephritis. The correlations were computed as for the previous set of statistics. The results are presented in table 2.

The data in table 2 are essentially the same as those contained in table 1. Only in the 1925 period was high barometric pressure accompanied by high mortality; and vice versa. In both the 1924 and 1925 periods, low temperature accompanied high mortality; and vice versa.

In order to ascertain the true nature of correlations between mortality and pressure or temperature, it is necessary to know what the correlation between any two of the factors would have been if there had been no simultaneous correlation between either of these and the third factor. The results can be obtained by the method of partial or net correlation.[3] The partial or net correlations for the data of tables 1 and 2 are

3. Phillips, F. M.: Pub. Health Rep. **38**: 2117-2129 (Sept. 14) 1923. Pearl, Raymond: Medical Biometry and Statistics, Philadelphia, 1923, p. 319.

presented in table 3. The subscripts used have the same meaning as in tables 1 and 2. The notation of partial correlation may be explained by two examples:

$r_{1,\,2.3}$ is the correlation between deaths from heart disease (1) and barometric pressure (2) when temperature (3) is held constant.

$r_{1a,\,3.2}$ is the correlation between deaths from heart disease, cerebral hemorrhage and chronic nephritis (combined (1a) and temperature (3) when barometric pressure (2) is held constant.

TABLE 2.—*Correlations Between Deaths from Heart Disease, Cerebral Hemorrhage and Chronic Nephritis and Mean Barometric Pressures or Mean Temperatures* *

Coefficient	1924 (52 weeks) r ± P. E.	1924 (52 weeks) r/P. E.	1925 (52 weeks) r ± P. E.	1925 (52 weeks) r/P. E.	1926 (13 weeks) r ± P. E.	1926 (13 weeks) r/P. E.
$r_{1a,\,2}$	−0.043 ± 0.093	0.46	+0.272 ± 0.087	3.1	+0.042 ± 0.187	0.22
$r_{1a,\,3}$	−0.745 ± 0.042	17.7	−0.681 ± 0.050	13.6	+0.141 ± 0.184	0.77

* Subscript 1a indicates weekly deaths from specified causes; 2, weekly mean barometric pressure; 3, weekly mean temperature.

TABLE 3.—*Partial Correlations Between Mortality from Certain Specified Causes and Mean Barometric Pressures or Mean Temperatures*

Coefficient	1924 (52 weeks) r ± P. E.	1924 (52 weeks) r/P. E.	1925 (52 weeks) r ± P. E.	1925 (52 weeks) r/P. E.	1926 (13 weeks) r ± P. E.	1926 (13 weeks) r/P. E.
$r_{1,\,2.3}$	−0.229 ± 0.089	2.6	+0.324 ± 0.084	3.9	+0.449 ± 0.150	3.0
$r_{1,\,3.2}$	−0.690 ± 0.049	14.1	−0.735 ± 0.043	17.1	+0.540 ± 0.133	4.1
$r_{1a,\,2.3}$	−0.315 ± 0.084	3.8	+0.332 ± 0.084	4.0	+0.210 ± 0.179	1.2
$r_{1a,\,3.2}$	−0.807 ± 0.032	25.2	−0.696 ± 0.049	14.2	+0.246 ± 0.176	1.4

The data in table 3 indicate that:

1. In 1924, there was a slight inverse correlation between mortality from heart disease and barometric pressure ($r_{1,\,2.3}$). There was a much higher and more significant, inverse correlation between deaths from heart disease, cerebral hemorrhage and chronic nephritis (combined) and pressure ($r_{1a,\,2.3}$). For both groups of causes of death (1 and 1a) there were very high inverse correlations with temperature ($r_{1,\,3.2}$; $r_{1a,\,3.2}$).

2. In 1925, there were significant, direct correlations between mortality and barometric pressure ($r_{1,\,2.3}$; $r_{1a,\,2.3}$); and very large, inverse correlations between mortality and temperature ($r_{1,\,3.2}$; $r_{1a,\,3.2}$).

3. For the first thirteen weeks of 1926, mortality from heart disease showed positive correlations with barometric pressure ($r_{1,\,2.3}$), and with temperature ($r_{1,\,3.2}$). There were no significant correlations between the larger mortality group and either weather factor ($r_{1a,\,2.3}$; $r_{1a,\,3.2}$).

It is clear that, in some of the periods studied, mortality has been associated with high and in others with low barometric pressures. The correlations with temperature were inverse in the 1924 and 1925 periods. Only for the thirteen weeks' period of 1926 were the temperature correlations positive. On examination of the original data, it was discovered that the unusual observations for the 1926 period are due to the unusual figures of a single week. In the week of March 26, 1926, the mean temperature exceeded the average for the period by 12.6 degrees F., and the deaths from heart disease exceeded the weekly average by sixty-four. The indication is that a sudden and unusual rise in temperature in the early spring was associated with an excessive mortality from diseases of the circulatory system.

It is apparent from the inconsistencies in the data of table 3 that a more restricted analysis is necessary. In a further series of computations, the data for 1924, 1925 and 1926 were combined to give tabulations for periods of three months each. Thus, for the first quarter of the year (January, February, March) were combined the data for this period in 1924, 1925 and 1926; for the remaining quarters of the year, the data include the corresponding data for 1924 and 1925 only. The results of the correlation calculations are presented in table 4. The notation is the same as in table 3.

From the data in table 4 it appears that the correlations between mortality and barometric pressure, whether or not temperature is held constant ($r_{1a,\,2}$; $r_{1a,\,2.3}$) are small, and are sometimes direct and sometimes inverse. The correlations between mortality and temperature are statistically insignificant in the first and third quarters, but are definitely significant and inverse in the second and fourth quarters ($r_{1a,\,3}$: $r_{1a,\,3.2}$). In the last cases, the coefficients are all negative, are between 0.4 and 0.78 in absolute value, and are from 3.6 to 16.0 times their probable errors. The data clearly indicate that in the second and especially in the fourth quarters mortality varies inversely as the temperature.

SUMMARY AND CONCLUSIONS

From a study of the vital statistics and the weather records of Chicago for the period January, 1924, to April, 1926, it appears that:

1. Mortality from organic diseases of the heart, or from organic diseases of the heart, cerebral hemorrhage and chronic nephritis combined, is unusually high when the temperature is low, and is low when the temperature is high.

2. There is no uniform correlation between fluctuations in mortality from the specified causes of death and variations in barometric pressure.

3. Variations in mortality from the specified causes are inversely correlated to a very high degree, with variations in temperature in the second and fourth, but not in the first and third quarters of the year.

The results of this investigation suggest that patients who are expecially exposed to the lethal effects of organic diseases of the heart, cerebral hemorrhage and chronic nephritis should be warned of the unusual danger attendant on cold weather.

TABLE 4.—*Correlations Between Mortality from Certain Specified Causes, Barometric Pressure and Temperature, 1924, 1925 and 1926* *

Coefficient	First Quarter (Jan.-Mar.) r ± P. E.	First Quarter (Jan.-Mar.) r/P. E.	Second Quarter (Apr.-June) r ± P. E.	Second Quarter (Apr.-June) r/P. E.	Third Quarter (July-Aug.) r ± P. E.	Third Quarter (July-Aug.) r/P. E.	Fourth Quarter (Sept.-Dec.) r ± P. E.	Fourth Quarter (Sept.-Dec.) r/P. E.
$r_{1a,\,2}$	+0.231 ± 0.105	2.2	+0.292 ± 0.121	2.4	−0.122 ± 0.130	0.94	+0.108 ± 0.126	0.86
$r_{1a,\,3}$	+0.152 ± 0.108	1.4	−0.426 ± 0.108	3.9	+0.108 ± 0.130	0.83	−0.786 ± 0.050	15.7
$r_{2,\,3}$	−0.235 ± 0.105	2.2	−0.149 ± 0.130	1.2	−0.342 ± 0.117	2.9	−0.097 ± 0.126	0.77
$r_{1a,\,2.3}$	+0.278 ± 0.102	2.7	+0.256 ± 0.123	2.0	−0.091 ± 0.131	0.69	+0.052 ± 0.127	0.41
$r_{1a,\,3.2}$	+0.218 ± 0.105	2.1	−0.404 ± 0.111	3.6	+0.071 ± 0.132	0.54	−0.784 ± 0.049	16.0

* First quarter of 1926.

DERMATOMYOSITIS

REPORT OF CASE *

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Dermatomyositis is of interest because of its rarity and the remarkable character of its manifestations. Steiner [1] defines it as an "acute, subacute or chronic disease of unknown origin, characterized generally by a gradual onset, with vague and indefinite prodomata followed by edema, dermatitis, and multiple muscle inflammation." The combination of dermatitis with edema and general myositis, producing at first muscle pains and weakness, and then contractures, forms a striking clinical picture. That this is a distinct disease entity cannot be doubted when one considers the constancy with which each case presents always the same typical symptom complex. About fifty cases have been reported, largely by Europeans. Steiner [2] has given a summary of the literature and an excellent description of the disease.

REPORT OF CASE

A woman, aged 50, a native of Alabama and the wife of a horticulturist, had a violent attack of tonsillitis just preceding the onset of this disease. Otherwise the history was not significant. The tonsils appeared normal, however, when I saw her, and cultures of the throat showed nothing noteworthy. The onset was gradual, and there appeared almost simultaneously both dermatitis and myositis. The skin manifestations, true to type, were protean in character; at first they so closely resembled lichen planus that they were so diagnosed by an experienced dermatologist. Later, there was a general dermatitis. An attempt was made to attribute these skin manifestations to the large amount of arsenic the patient had received in previous treatments, but Dr. Andrew L. Glaze, the skin consultant, stated that the skin picture was in no respect typical of arsenic poisoning. Briefly, the skin of almost the entire body was red, fairly smooth and markedly thickened with symmetrical lines of sharp demarcation, along which lines were vesicles resembling those of lymphangioma circumscriptum. There were also areas of telangiectasis, and flat atrophic scars. It is noteworthy that several months later, when the acute manifestations had subsided, typical arsenical keratoses appeared which had not been observed before.

The muscle pains with diminished but still present reflexes, the extreme weakness involving chiefly the legs and arms, and the edema coincided with the descriptions of other authors. The contractures at the elbows, which are regarded as typical of this disease, completely disappeared as the patient progressed toward recovery.

There was a secondary anemia of moderate degree, and a slight increase (33 per cent) in the small mononuclear cells of the blood. The Wassermann reaction was negative, and the chemical reactions of the blood were normal. Blood cultures gave no growth. The urine showed constantly a little albumin, which, together with the low phenolsulphonphthalein ouput and the fixation of specific gravity, suggested renal impairment.

We were particularly interested in knowing whether the myocardium was involved in the general muscle inflammation. The heart was of normal size and regular, and its sounds were normal. The electrocardiograph showed a normal curve.

Under local anesthesia, a piece of muscle was removed from the thigh. The great pallor of the tissues and the edema were such that it was difficult at the operation to distinguish muscle from fascia. Muscle, fascia and fat, all had the same milky appearance. It was evident that muscle inflammation was not the sole morbid process, for there was extensive edema involving all soft structures alike.

Dr. Graham's report of the histologic examination may be thus summarized: There was inflammatory exudate in the endomysial fibrous tissue, which occurred beside the blood vessels in circumscribed foci and also to a slight extent as diffuse infiltration. The cells were lymphocytes, plasma cells and occasional eosinophils. In addition, there were slight degenerative changes in the muscle fibers, but this probably represented a late stage of the disease.

Although the prognosis in dermatomyositis is as a rule bad, this patient, after a period of about fifteen months, shows subsidence of the dermatitis and the edema, and gradual return of muscle power. She has received no treatment beyond rest, a well balanced diet, and the sodium thiosulphate which we gave her with a view of getting rid of the arsenic she had previously received.

COMMENT

The cause of dermatomyositis is the subject of interesting speculation. The weight of evidence has seemed to favor bacterial invasion, which is borne out in this case by the immediately antecedent tonsillitis. At the same time, the persistence here of arsenical keratoses after the other skin changes have disappeared leads us to wonder whether metal poisoning could possibly play a causative rôle. On the other hand, the interesting suggestion has recently been made by Dr. Theobald Smith [3] that the disease may be due to the invasion of the muscular system with sarcosporidia from animals, especially the pig. He suggests, further, that the reason the etiology has not been cleared up is possibly that these parasites on entering an aberrant host might be unable to continue to grow sufficiently for histologic recognition, but that the abortive growth might lead to sufficient foreign protein to cause the inflammation of the muscle tissue. To prove or disprove this theory, it would be necessary, as he says, to obtain the muscle tissue at the very earliest stage before inflammatory reactions obscure the histologic picture. Apparently this has never bene done.

* Read before the Association of American Physicians, Atlantic City, May 5, 1926.

1. Steiner, W. R.: J. Exper. Med. **6**: 407, 1905.
2. Steiner, in Oxford Medicine.

THE ACTION OF CALOMEL ON THE BILE *

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The green color of calomel stools has been the subject of considerable speculation and investigation. G. von Oettingen,[1] in 1848, and Buchheim,[2] in 1856, showed that there is an actual increase of bile pigments in the feces, and this naturally suggested that the calomel increased the bile flow; i. e., that it was a true cholagogue. However, direct experiments with biliary fistulas, acute and permanent, in animals and in man, showed quite definitely that the bile flow is not increased after the administration of calomel.[3]

If the increase of bile pigment is not due to an increased flow of bile, it must apparently be due to the protection of these pigments against the destruction or reductive processes which ordinarily cause their

3. Smith, Theobald: Personal communication to the author.

* From the department of Pharmacology of the Western Reserve University School of Medicine.

1. Von Oettingen, G.: Dissertation, Dorpat, 1848.
2. Buchheim: Arzneimittellehre, 1856, p. 262.
3. Doyon and Dufour: Arch. de Physiol. norm. et path. **5**: 67, 1897. Koelliker and Mueller: Wuerzburger Verhandl., 1855. Mosler: Virchows Arch. f. path. Anat. **13**: 29, 1858. Prevot and Binet: Comp. rend. Acad. d. sc. **56**: 1690-1692, 1888. Pfaff and Balch: J. Exper. Med. **2**: 49 1897. Roehrig: Strickers Jahrbuch, 1873. Rutherford: Tr. Roy. Soc Edinburgh **29**: 133, 1879. Scott, Beale: Arch. Med. **1**: 209, 1859.

disappearance or modification to yellow or colorless products, while they are passing down the course of the intestine. Hoppe Seyler [4] illustrated this by an experiment which is often cited and demonstrated: If fresh bile is placed in open test tubes and kept at room temperature or incubated, it putrefies and at the same time turns decidedly yellow. If, however, from 1 to 3 per cent of calomel is added before the incubation, putrefaction is prevented and the bile preserves its dark green color; in fact, the green is deepened. The contrast is almost as striking as that between the color of the bile and normal feces, and strongly suggests, although it does not really prove, that this experiment furnishes the key to the color of the calomel stools. However, the explanation of Hoppe-Seyler's experiment itself, i. e., of the dark color of the calomel bile, has not been definitely established and a number of possibilities may be suggested.

1. The antiseptic action of calomel might check the activity of reducing bacteria and so prevent the putrefactive reduction of biliverdin to bilirubin and lower products. This is a natural assumption, since the addition of calomel has long been known to check the putrefaction of organic fluids such as blood and serum,[5] and of gastric and pancreatic juice, without interfering with the action of their unorganized ferments.[6] Zawadewski,[7] in 1887, confirmed this inference in the Hoppe-Seyler experiment also, showing that the calomel prevents the putrefaction of bile for several days while the green deepens. This undoubtedly suggests the dependence of the bile color on the antiseptic action, but it does not really prove it; the two effects might be merely coincident and not causal. To establish a causal relationship it would need to be shown that antiseptic conditions other than that produced by calomel have a similar effect on the color; and further, that factors other than antisepsis may be fairly excluded. As the first of these criteria, i. e., the effect of other antiseptics on the bile, has apparently not been investigated, we compared the effect of the following antiseptic agents on 10 cc. portions of fresh beef bile: calomel, 100 mg.; chinosol, 50 mg.; phenol (carbolic acid), 50 mg.; salicylic acid, 50 mg.; benzoic acid, 50 mg., and mercuric chloride, 50 mg. The tubes were kept in the incubator at about 38 C. and examined at the end of twelve, twenty-four, thirty-six and forty-eight hours, being compared with each other and with a specimen of the same bile whose original color was preserved by being kept in a stoppered bottle in the refrigerator. After twelve hours in the incubator, pure bile had acquired a marked putrid odor, and it had bleached to a light yellow. The other tubes did not become putrid even in forty-eight hours, and instead of bleaching, all had become a deeper green. The tint was about the same for calomel and the four organic antiseptics; but the mercuric chloride was of a different shade of green. This apparently involves distinctive phenomena which will be reserved for future consideration.

These experiments showed that other antiseptics produce the same effect as calomel: they prevent the putrefaction and with this the bleaching of the bile, which instead assumes a deeper green tint. The effect on the color therefore appears definitely as the result of antiseptic action. This would explain the prevention of bleaching by the restraint of putrefactive bacteria which normally reduce the biliverdin. The darkening of the color is due to spontaneous oxidation of bilirubin to biliverdin that takes place when bile is exposed to the air, unless it is overbalanced by bacterial reduction. This is confirmed by the observation that it takes place without the addition of chemical antiseptics if the bile is sterilized by autoclaving, or by passing a current of air for ten or fifteen minutes through ordinary bile. It may also be observed at the surface of pure bile that is exposed to the air at ordinary temperature. In the antiseptic experiments, the color is also deepest at the air surface, even though the concentration of the calomel is greatest at the bottom.

These experiments establish the conclusion that the antiseptic action of calomel would suffice to explain the green color of calomel bile. It remains to investigate whether other factors cooperate and reinforce the action.

2. The reduction of biliverdin might be due in part to the production of hydrogen sulphide, formed by the putrefaction from the cystin and the proteins of the bile. The calomel might act by binding this sulphide and so prevent its reducing action. However, the fact that the calomel is not blackened in the course of the experiment shows that it plays no such part. The antiseptic action of calomel apparently prevents the liberation of the sulphide. Clinically, the therapeutic dose of calomel could bind so insignificant a fraction of the intestinal hydrogen sulphide that such an action would not be important.

3. It has been suggested that calomel acts chemically to oxidize the reduction products of biliverdin. Zawadewski assumed that in alkaline mediums calomel is decomposed to mercurous oxide and that this in turn dissociates into mercuric oxide and metallic mercury. The mercuric oxide might act as an oxidizer—a similar reaction to that of mercuric chloride in Schmidt's [8] test for bilirubin and urobilin in feces. Whether mercuric oxide actually effects this oxidation, and if so, whether a sufficient quantity is produced in the Hoppe-Seyler experiment, does not appear to have been investigated directly. However, it cannot play a significant part for, as has been described, the biliverdin color is deepest on the air surface and not on the calomel surface, so that the oxygen evidently comes from the air and not from the calomel.

4. It is also conceivable that the oxidation might be effected through oxidases which might be stimulated by the calomel and the other antiseptics. However, direct tests for the presence of oxidases (guaiac and benzidine) in bile were negative, so that this assumption is not tenable.

5. Finally, it has been suggested that the dark color of the calomel bile might be due, not to biliverdin but to a blending with black mercurous sulphide. This suggestion has been especially advanced for the calomel stools, for instance, from Doyon and Dufour in 1897, although Buchheim, in 1856, had pointed out that therapeutic doses of calomel could not yield enough sulphide to produce the typical color.

As concerns the Hoppe-Seyler experiment, we have already stated that the calomel is not blackened when it is incubated with fresh bile. When incubated with putrefied bile the calomel darkens, but the color of the bile is not darkened. Similarly, if the bile is saturated with hydrogen sulphide (which bleaches the color) and calomel is then added, the calomel turns black but the bile does not darken. Nor does the addition of a

4. Hoppe-Seyler, cited by Wassilieff (footnote 6).
5. B. Voit, 1856.
6. Wassilieff, N. P.: Ztschr. f. physiol. Chem. **6**: 112, 1882.
7. Zawadewski: Maly's Jahresb. d. ges. Tierchemie **17**: 289, 1887.
8. Schmidt, A.: Verhandl. d. Cong. f. inn. Med., 1895, p. 320.

suspension of black bismuth sulphide or of charcoal to the incubated bile simulate the color of the calomel bile. It is therefore evident that the color of the calomel bile is not due to the formation of mercurous sulphide.

CONCLUSIONS

The addition of calomel to fresh bile prevents the change of color from green to yellow which otherwise occurs when the bile is incubated for a day; indeed, the green is actually deepened by the calomel.

The present investigations show that this effect is due solely to the antiseptic action of the calomel, restraining the growth of the putrefactive bacteria which ordinarily reduce the biliverdin, and which counteract the oxidation of bilirubin and other pigments.

This oxidation is due to the atmospheric oxygen and not to oxidases.

The dark color is not due to the mercurous sulphide.

As the green color of the calomel stools is presumably due to the same mechanism, it indicates that calomel really does act as an intestinal antiseptic. However, the action of calomel on the living intestine requires further investigation.

The effect of mercuric chloride and certain other reagents presumably involves different, directly oxidative reactions, which also require separate investigation.

EPIDEMIC MENINGITIS

A STUDY OF MORE THAN SIX HUNDRED AND FIFTY CASES, WITH ESPECIAL REFERENCE TO SEQUELAE *

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While epidemic meningitis is by no means a rare disease, the number of cases occurring when there is no epidemic is small. It seems worth while, therefore, to call attention to certain facts in regard to the disease based on a study of meningeal conditions in New York covering a period of sixteen years. During this time there has been no epidemic, so that the data show what occurs under normal conditions.

We have been impressed with the fact that most of the laity and many physicians think that patients recovering from epidemic meningitis are liable to be seriously handicapped, especially in their mental development. For this reason we have followed up as many of our patients who recovered as possible to learn what percentage of cases show after-effects, and the nature of them.

EPIDEMIOLOGY

Epidemic meningitis is apparently a disease to which most persons have a natural immunity. In our study we have on record only fourteen instances in which more than one case occurred in the same family. As most of these cases have been in crowded districts, it is obvious that these 654 patients have exposed to the infection several thousand persons. In spite of this we have not found cases occurring in neighboring apartments, except once. In this instance, a man residing in an upper apartment developed epidemic meningitis at about the same time as a case occurred in another family occupying a lower apartment in the same building.

It not infrequently happens that epidemic meningitis is superimposed on some other acute infection, particularly pneumonia or influenza.

In this locality by far the greatest number of cases have occurred during the first six months of the year. Table 1 shows the seasonal distribution.

TABLE 1.—*Seasonal Distribution of Epidemic Cerebrospinal Meningitis*

Year	January, February, March	April, May, June	July, August, September	October, November, December	Total
1910	..	..	1	4	5
1911	3	9	6	4	22
1912	8	6	4	7	25
1913	9	10	1	4	24
1914	25	11	5	10	51
1915	14	10	5	6	35
1916	22	28	10	15	75
1917	19	45	9	12	85
1918	51	46	19	20	136
1919	20	10	9	9	57
1920	13	5	4	5	27
1921	15	9	5	7	36
1922	13	8	2	5	28
1923	6	6	3	3	18
1924	3	6	3	1	13
1925	5	1	5	6	17
Total	226	219	91	118	654
Seasonal distribution by percentage	34.6	33.5	13.9	18	

A study of the distribution by sex of 650 cases shows a preponderance of males, nearly in the ratio of 3:2, as indicated in table 2.

TABLE 2.—*Sex Distribution of Epidemic Cerebrospinal Meningitis*
1925 Inclusive

	Male	Female	Total	Unknown
3 months	16	6	22	1
3 to 6 months	37	26	63	..
6 to 12 months	56	24	80	..
1 to 2 years	50	27	77	1
2 to 3 years	15	22	37	..
3 to 5 years	42	39	81	..
5 to 10 years	50	56	106	2
10 to 20 years	57	44	101	..
20 to 30 years	40	14	54	..
30 to 40 years	7	11	18	..
40 to 50 years	3	7	10	..
50 to 60 years	0	1	1	..
Total	377	277	650	4
Percentage	57.5	42.5		

A study of the age distribution reveals some interesting and instructive facts. A glance at table 3 will readily show that epidemic meningitis is largely a disease of infancy and early childhood. A far larger number of cases occur during the first year of life than in any other one year. This, incidentally, raises the mortality rate, as this disease is especially fatal during early infancy.

ETIOLOGY

The causative agent of epidemic meningitis is the meningococcus, the presence of which in the spinal fluid must be proved by culture before an absolute diagnosis can be made. It is probable that there is a brief invasion by the organism into the blood in practically all cases of epidemic meningitis. It is now commonly accepted that the organisms usually enter the blood stream through the mucous membrane of the nasopharynx, and then localize in the meninges. While the presence of meningococci in the blood is usually transient, in a certain type of case, the septicemic, they may persist in the blood stream for a considerable

* From the Meningitis Division, Bureau of Laboratories, Department of Health.

period of time, either before or after the meningeal localization. It occasionally happens that the meningococci remain in the blood and do not reach the meninges, thus producing a true meningococcemia.

SYMPTOMATOLOGY

While many writers divide epidemic meningitis into a variety of classes, an adequate conception of the disease may perhaps be expressed by presenting four clinical pictures; that of the most common type occurring in older children and adults; that occurring in infancy; the septicemic type, and the fulminating type. The clinical picture in all is modified by the severity of the infection and the resistance of the individual.

TABLE 3.—*Age Distribution*

3 months	23
3 to 6 months	63
6 to 12 months	80
Total under 1 year	166
1 to 2 years	78
2 to 3 years	37
3 to 5 years	81
5 to 10 years	108
10 to 20 years	101
20 to 30 years	54
30 to 40 years	18
40 to 50 years	10
50 to 60 years	1
Total	654

The Usual Picture in Older Children and Adults.—The classic picture of epidemic meningitis in older children and adults is fairly familiar to all. There is a sudden onset, with headache, vomiting and fever of an irregular type. Convulsions may occur, especially in children. Hyperesthesia is fairly common. Delirium is not uncommon. There is a petechial eruption in 12 or 15 per cent of cases, which soon fades. An herpetic eruption is fairly frequent. The bowels are usually constipated, and there is sometimes retention of urine. Within the first twenty-four to forty-eight hours, stiffness of the neck and the Kernig and Brudzinski signs appear. Early in the disease, the tendon reflexes are likely to be exaggerated and equal. Later they may become unequal, diminished and finally lost. The reaction of the pupils to light follows the same course. In children, a positive Macewen sign indicating increased intraventricular pressure can usually be detected. Strabismus occasionally occurs, more frequently in children than in adults.

The course of the disease in a treated case depends on how early the serum is administered and the response of the patient to treatment.

There are four courses which the disease may pursue: 1. The disease may run an acute course, the patient either dying or recovering after a few doses of serum. 2. The disease may be greatly prolonged, so that twenty or more doses of serum may be given before recovery or death finally takes place. 3. The disease may relapse after apparent recovery, indicating, perhaps, some focal or walled off infection that breaks down. In this type of case recovery may take place. We have comparatively few cases belonging to this class. 4. There is a class in which there is blocking at the base. This type, with few exceptions, is fatal.

The Clinical Picture in Infancy.—It has already been shown in table 3 that more cases occur in the first year of life than in any other one year. It is at this age that the mortality is highest and the diagnosis most difficult.

In infancy we do not see early the stiffness of the neck, Kernig's sign and the changes in reflexes that characterize the disease in older children and adults. The onset is less sudden. There is often vomiting and practically always some intestinal disturbance. There is an irregular fever. The gastro-intestinal condition does not respond to the usual methods of treatment. Convulsions often occur early, but these are so common in other diseases of infancy that they are not diagnostic. Usually ten days or two weeks have elapsed before symptoms develop that direct the physician's attention to the central nervous system. These may be the development of strabismus, a fairly well defined rigidity of the neck or severe convulsions. Much earlier, a bulging of the fontanel might have been detected if an examination of the child had been made when not crying. The pupillary and patellar reflexes are often normal when the case is well advanced. Certainly, an irregular fever and a gastro-enteritis that does not respond readily to treatment, especially when there is a bulging fontanel, are sufficient indications for an early lumbar puncture. It is in these young children that a walling off at the base with a resulting dry tap most frequently occurs.

The Septicemic Type.—This type of meningitis is quite rare among sporadic cases. In certain of the army camps during the war there was a very large percentage of this type of case. The early picture is that of a septicemia rather than a meningitis, the meningeal symptoms developing five or six days or more after the onset. A profuse and rapidly spreading macular or purpuric rash is an almost constant feature. The rash usually persists for some time. Other indications of a generalized blood infection, such as joint involvements, may be present even before the meningeal symptoms.

The Fulminating Type.—This form is rare. It is characterized by a violent onset. The patient is usually seized with severe headache and vomiting, and speedily loses consciousness. The course is very brief, death supervening within from twenty-four to forty-eight hours. It sometimes happens that the patient dies in an even shorter period. There are cases on record in which the patient retired in apparently good health and was found dead in the morning. The importance of this from a medicolegal standpoint must be borne in mind. It may be of interest to note that this form of meningitis is most likely to occur in persons of the status lymphaticus type.

DIAGNOSIS

There is a large number of diseases which may in some respects simulate epidemic meningitis. The following are the more important conditions that may cause confusion in the diagnosis: other forms of purulent meningitis; occasionally, tuberculous meningitis; acute anterior poliomyelitis (especially the nonparalytic type); epidemic encephalitis; brain abscess; sinus thrombosis; cerebrospinal syphilis; tetanus; meningeal or cerebral hemorrhage; uremia; meningism associated with acute infections, such as gastro-enteritis, acidosis, tetany and typhoid; typhus fever; bacterial endocarditis; purpura hemorrhagica; the acute leukemias, and certain forms of drug and metallic poisonings.

Space does not permit a discussion of the differentiated points of diagnosis. An absolute diagnosis of epidemic meningitis depends on the demonstration by culture of the meningococcus in the spinal fluid. A presumptive diagnosis, however, may be made in cases showing the characteristic changes of meningitis in the spinal fluid, and responding to serum treatment, even

though the presence of meningococci has not been demonstrated.

LABORATORY OBSERVATIONS

The blood shows a varying increase in the leukocyte count, and there is a polymorphonucleosis. It has been quite definitely proved that there is usually an early transient bacteremia. As has already been stated, in the septicemic type of the disease, the meningococci persist in the blood for a comparatively long time.

The examination of the spinal fluid is by far the most useful aid in diagnosis. Netter states that in the first twenty-four hours the fluid is practically almost clear and mononuclears predominate. We have seen very few cases so early as this. In the early stages of the disease the fluid is increased in amount and shows varying degrees of turbidity. The cells are greatly increased and the polymorphonuclears predominate.

The stained smear shows varying numbers of gram-negative diplococci, both intracellular and extracellular. The protein content is moderately to greatly increased. The sugar content may be normal early in the disease, but later it practically always is diminished or absent. With improvement in the clinical picture there is usually a decided rise in the amount of sugar. We regard this as a valuable prognostic point.

On suitable mediums, the meningococci develop in twenty-four hours or more. Their identity may be proved by agglutination with meningococcus serum and the fermentation test. A definite diagnosis cannot be made from the smear alone, as meningitis may be caused by other gram-negative cocci; moreover, the gram-positive cocci are sometimes easily decolorized in the smear.

In one instance, when the diagnosis was not made during the acute stage and serum was not administered, the patient's serum showed well defined complement fixation with the meningococcic antigen. We do not regard this as a valuable diagnostic aid, as it has failed in other cases.

TREATMENT

We have always favored a conservative method in treatment. We ordinarily give serum every twenty-four hours, injecting 20 cc. by gravity intraspinally if as much or more fluid has been obtained. In certain instances, when only a small amount of fluid is obtained, we inject more than the amount of fluid withdrawn, provided the serum runs in easily by gravity and no untoward symptoms result. We continue the daily intraspinal injection of serum until the fluid is sterile. After this the injection of serum is determined by the clinical picture. It is often necessary to do one or more lumbar punctures during convalescence for relief of pressure without administering serum. In the average case with recovery, from six to ten doses of serum are required. It is rarely safe to give less than four injections. In very severe cases we often give the second and third injections at eighteen hour intervals. In the septicemic type of case in adults, we administer the serum intravenously as well as intraspinally. We do not, however, approve of the intravenous method of serum administration in children, concurring in this with the opinions of Netter and Blackfan. Incidentally, the septicemic type is rare in children.

During the last few years there has been a trend toward a more intensive method of treatment. Advocates of this method give serum every twelve or even every eight hours intraspinally, and also give it intravenously and intramuscularly in every case. In order to compare the results of this method of treatment with our own, we studied the records of a children's service at an excellent hospital in the city from January, 1918, to October, 1921. During this period, seventy-nine cases were treated at that hospital by the more intensive method, with a mortality of 54 per cent. During the same period we treated 254 cases, with a mortality of 23 per cent. This seemed to us very strong proof that there is no advantage in the more heroic method of treatment. Much attention has been called to the favorable results following the intravenous use of serum in certain of the army camps in which the septicemic type predominated. It is important, therefore, to note that successful results were obtained by the intraspinal method of treatment alone in those camps in which the septicemic type of case did not prevail. In a personal communication, Dr. Harold E. Smith stated that at Camp Mills eighty cases were treated only by intraspinal injections with a mortality of 10 per cent—an excellent result. It certainly seems to us that the enthusiasm for administering serum intravenously in cases other than the septicemic type is ungrounded.

It quite frequently happens that in infants there is a blocking at the base of the brain, so that little or no fluid can be obtained by lumbar puncture. In these cases it is necessary to resort to ventricular puncture for the withdrawal of fluid and the injection of serum. By this method the ventricular fluid is usually rendered sterile. However, in all but two instances the adhesions have persisted with resulting hydrocephalus, and death has followed. The ventricular puncture is usually performed daily in alternate ventricles. When adhesions occur along the spine a cisternal puncture has been resorted to for relief of pressure. As we have been afraid of pressure on the medulla, we have not given serum by this method. In young babies the ventricular puncture is safer than the cisternal puncture. Reports have been made to us of hemorrhage following cisternal puncture in infants. In older children and in adults we have resorted to trephine in order to do a ventricular puncture. The results have been uniformly unsatisfactory. It is important to note that failure to obtain fluid by lumbar puncture does not always indicate adhesions, as it sometimes happens in these cases that a considerable amount of serum may be introduced readily by gravity. In a number of instances, there has been recovery in cases of this type. A recent article [1] emphasizes the value of both ventricular and cisternal punctures in advanced meningococcus meningitis. As stated, our results have been decidedly unsatisfactory in the number of cases treated by more radical methods. It is to be noted that the author of the article referred to cites very few cases (and only one of his own) on which to base his opinion. We have on record many similarly obstinate cases treated only by spinal puncture in which the results were equally brilliant and successful. However, we appreciate that in rare instances ventricular or cisternal punctures may be valuable adjuvants to the spinal method.

In cases that have become chronic, we have used autogenous vaccine sometimes with apparently satisfactory results, both intraspinally and subcutaneously.

The general treatment is largely symptomatic. The three points that must always be borne in mind are that the patient must be kept quiet by adequate sedatives; he must have sufficient nourishment, and attention

1. Peet, M. M.: Advanced Meningococcus Meningitis, J. A. M. A. **86**: 1818 (June 12) 1926.

must be paid to elimination, as constipation is usually present and retention may occur. The patient should be kept in a quiet, dark room with proper ventilation.

MORTALITY

A certain number of cases were omitted from the mortality statistics chiefly because we were unable to obtain cooperation in carrying out the treatment. Our mortality for 627 cases is nearly 30 per cent. Certain factors have operated to make this mortality so high. The large percentage of children under 1 year of age is an important factor. Most of our patients had been ill several days and some as long as two or three weeks before we were called in consultation. A certain number of patients had pneumonia or some complication not directly connected with the meningitis which was a contributing factor in the cause of death.

In certain years the mortality has been very satisfactory; for example, from July 1, 1916, to July 1, 1917, eighty-five patients were treated, with a mortality of 23.5 per cent; from July 1, 1917, to July 1, 1918, 112 patients were treated, with a mortality of 19 per cent; from July 1, 1918, to July 1, 1919, seventy-eight patients received treatment, with a mortality of 20.5 per cent. Table 4 shows the mortality by age groups.

TABLE 4.—*Mortality by Age*
1925 Inclusive

	Recovered	Fatal	Total	Mortality, per Cent
Under 1 year	83	72	155	46.5
1 to 2 years	51	21	72	29.2
2 to 5 years	92	23	115	20
5 to 10 years	87	22	109	20.2
10 to 20 years	74	23	97	23.7
20 to 30 years	35	18	53	34
Over 30 years	18	8	26	30.8
Total	440	187	627	29.8

SEQUELAE

Many of the impressions in regard to the sequelae of epidemic meningitis seem to be based on the history obtained from parents who are prone to ascribe the cause of some defect, especially mental, to a previous illness. In view of the many diseases that may be confused with epidemic meningitis, unless a careful study of the spinal fluid is made, it has seemed to us important to determine the final outcome in a fairly large number of cases definitely diagnosed.

Our study shows that the great majority, 82 per cent, make a complete recovery. About 18 per cent of the cases do show sequelae, and these are often of a serious nature. It is important to note that the defects for the most part develop during the acute stage of the disease and are the direct and immediate result of the inflammatory process. This is in marked contrast to the sequelae of epidemic encephalitis which develop months or even years after the more acute process has subsided.

The most important and frequent of the sequelae is deafness. This is usually bilateral, complete and permanent. In a certain number of cases, however, there is partial or complete recovery from the deafness. In the younger children the deafness was accompanied by mutism. Once there was mutism not associated with deafness. Another patient had halting speech.

Defects of vision are of rarer occurrence. They were found in seven instances. In one case there was bilateral defective vision secondary to hydrocephalus. In the remaining six there was an iridochoroiditis which terminated in a panophthalmitis resulting in complete loss of vision except in one instance, in which, after a short period of complete blindness, the patient regained power to perceive light. It should be noted that the blindness was unilateral in all but one case.

There is a widespread impression that epidemic meningitis is liable to be followed by defective mental development. Our experience does not bear this out. In only eight instances was there any indication of residual disturbances in mentality or intelligence. Four patients, one of whom suffered from hydrocephalus, were definitely subnormal mentally. Three patients complained of nervousness, which may or may not have been the result of the meningitis. One patient became confused occasionally in conversation, but he was able to do clerical work.

TABLE 5.—*Sequelae*

	Number	Per Cent
1. Impairment of hearing	28	7.7
(a) Totally deaf 21		
(b) Partially deaf 5		
One was totally blind in one eye		
One had headaches		
2. Paralyses	11	3.2
(a) Four had strabismus		
(b) Right leg and thigh and ankylosis of spine, lumbar region		
(c) Right arm		
(d) Two fingers of right hand		
(e) Right leg		
(f) Strabismus and facial paralysis		
(g) Right hand slightly		
(h) Left arm and leg		
3. Mental disturbances	8	2.3
(a) One hydrocephalic; weakness of legs and atoxic gait; some defect of vision; retarded development		
(b) Two showed poor mental development		
(c) Three, nervousness		
(d) One mentally confused occasionally		
(e) One poor progress in school, forgetfulness and headaches		
4. Defects of vision (5 plus 2 already listed)	7	2.1
(a) One blind in both eyes, nervous, fretful		
(b) Three blind in one eye		
(c) One defective vision in one eye and also nervousness; one case has already been classified under defective hearing, and a second under mental defects		
5. Headaches	3	0.9
6. Speech defects	2	0.6
(a) One had halting speech		
(b) One mute but could hear		
7. Sphincteric disturbances	2	0.6
(a One rectal		
(b) One difficulty in voiding		
8. General weakness	2	0.6
(a) One unable to work		
(b) One complained of pain and stiffness of back and general weakness		
9. Pachymeningitis nearly two years after illness	1	0.3
10. Transverse myelitis with rectal and vesical involvement and paralysis of both lower extremities	1	0.3

Eleven patients showed some form of paralysis, the detailed distribution of which may be noted in the table, These paralytic patients showed a tendency to improve in many instances, and some of them gave promise of complete recovery in the future.

In those patients suffering from headache or general weakness, it was difficult to decide to what extent the meningitis was actually responsible for these conditions.

Rarer but nevertheless important sequelae were also encountered. In two instances there were sphincteric disturbances—one rectal and one vesical. One patient developed a pachymeningitis nearly two years later. Another patient developed a complete transverse myelitis, which had its inception early in the convalescent period. Table 5 gives a detailed list of the sequelae.

The total number of cases followed up was 337. In 276 of these, or 81.9 per cent, there was complete recovery, while 61, or 18.1 per cent, showed sequelae. In several instances there was more than one sequelae.

Clinical Notes, Suggestions and New Instruments

ELASTIC RESTRAINT FOR FIBRINOUS PLEURISY *

LOUIS DUNN, M.D., MINNEAPOLIS

In fibrinous pleurisy, it is frequently advisable to strap the chest. A cloth from 4 to 6 inches wide drawn snugly around the lower part of the chest, and adhesive plaster strips are advocated by different men.

I have just passed through eight weeks of fibrinous pleurisy which involved the diaphragm of both sides. The long illness enabled me to form some conclusions as to the method and value of strapping.

I used a 4 inch strip of cloth snugly encircling the chest at the level of the lower end of the sternum. This gave me great comfort after I became used to it. I tried a leather strap around the chest below the lower end of the sternum. This was fairly comfortable when I was sitting up, but intolerable when I was lying down. This applies, also to adhesive straps which, in order to be efficient, must cross the median line and be attached to the ribs of the opposite side. I also used an elastic abdominal belt 5 inches wide, encircling the waist and covering the epigastrium, the ribs and the costal cartilages below the sternum. This was tightened so that it restrained excursions of the lower chest, yet permitted easy breathing. It was the most comfortable and efficient restraint I found.

The purpose of compression is to relieve pain and pleural irritation by lessening friction. Complete immobilization of the chest is not necessary in order to accomplish this. Quiet breathing promotes comfort. It is deep breathing that develops pain. Elastic compression allows the minimum of chest excursion without curtailing its necessary activity. When the friction rub is present over the parietal chest, the excursion of the ribs should be restrained by an elastic belt similar to the one already described for use in diaphragmatic pleurisy.

CONCLUSIONS

1. Absolute immobilization of the chest in fibrinous pleurisy is neither desirable nor necessary.

2. An elastic web belt is comfortable and efficient, allowing quiet breathing which is sufficient to relieve pain and diminish pleural friction.

3. Elastic compression should be used to restrain the ribs in parietal pleurisy.

4. Upper abdominal elastic restraint is efficient and comfortable in diaphragmatic pleurisy.

3040 Lyndale Avenue South.

* Read before the New Asbury Hospital Staff, Oct. 6, 1926.

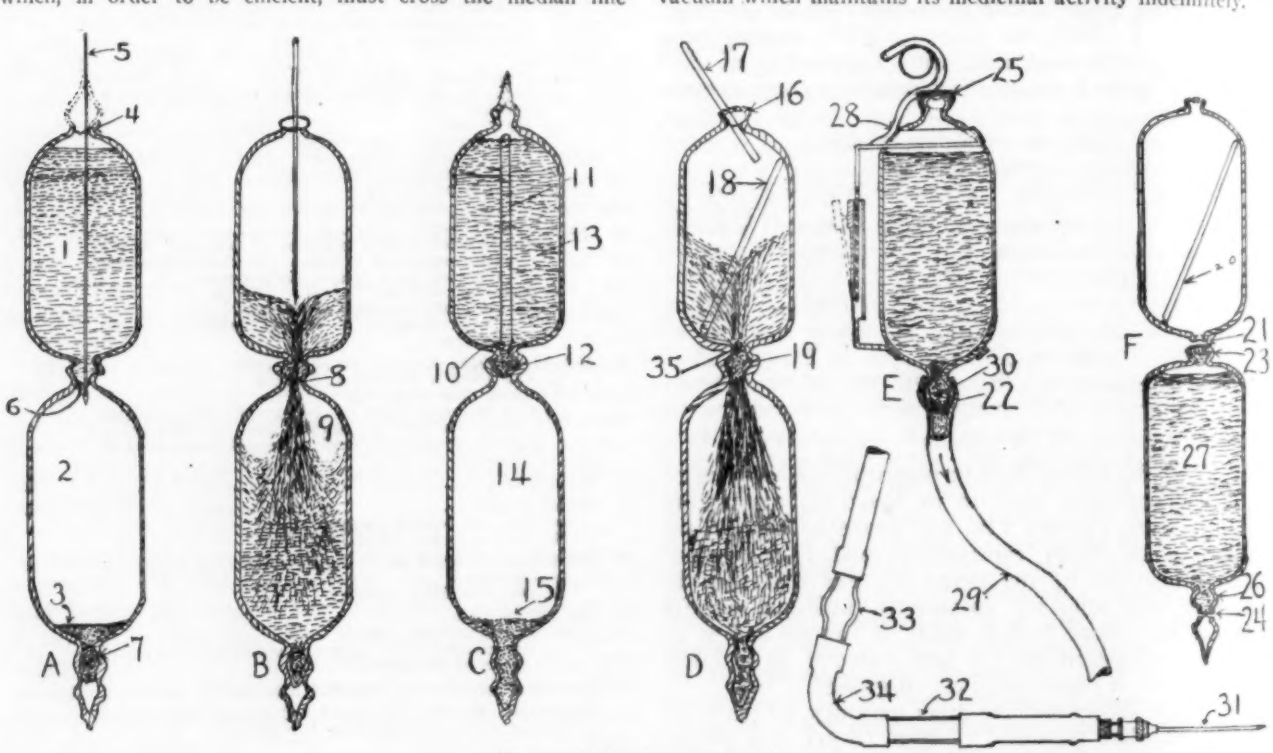
NEW TWO COMPARTMENT VACUUM AMPULE

ARTHUR E. SMITH, D.D.S., M.D., LOS ANGELES

The purpose of this two compartment vacuum ampule is to provide means by which fresh sterile intravenous solutions can be accurately and quickly prepared for injection. It is of value for maintaining and preparing arsphenamine, neoarsphenamine and solution of procaine hydrochloride and epinephrine hydrochloride in Ringer's solution. However, it can be employed for other drugs for intravenous or endermic injection.

The advantages of this ampule are as follows:

1. In one compartment the drug is hermetically sealed in a vacuum which maintains its medicinal activity indefinitely.



Two compartment vacuum ampule.

2. The other compartment contains an accurate amount of sterile distilled water.

3. The drug and the vehicle are hermetically separated by an easily fractured wall.

4. At the time of use, the wall between the two compartments is fractured. This breaks the vacuum, and the vacuum draws the vehicle into the drug compartment.

5. A fresh sterile solution of known medicinal value is quickly and accurately prepared at the time of injection.

In the accompanying illustration, A and B are double ended ampules, the two compartments of which are separated by a small platinum foil disk; C and D are double ended ampules, the two compartments being separated by a thin wall of glass. E and F illustrate the technic of manipulation. 1 is a compartment containing the vehicle—sterile distilled water; 2, a vacuum compartment containing arsphenamine or other drug, shown at 3. The neck is etched and broken at 4. A pointed sterile wire or probe, 5, punctures the thin platinum foil disk, 6, which breaks the vacuum in compartment 2, thus

drawing the vehicle through broken seal 8 into compartment 9. 7 is a sterile gauze filter.

At C is shown another design in which the two compartments are separated by a thin glass wall or tube, illustrated at 11, surrounded by sterile vehicle 13. The glass tube is constricted at 10. Drug 15 is sealed in vacuum 14. A sterile gauze filter is at 12. The neck is broken at 16 and a sterile rod or probe 17 is inserted through opening 16 and lateral pressure is exerted against closel tube 18, fracturing it at the constricted portion. This breaks the vacuum, and the sterile vehicle rushes through the constricted neck and sterile gauze filter 19 into the drug compartment.

At F are shown the two compartments separated at 21: the empty vehicle compartment and the broken tube, 20. The solution is located at 27. Rubber tubing 22 is placed over bulb 23. The container is now reversed and the tip is broken at 24. Rubber cap 25 is placed over bulb 26. The container is now placed in adjustable holder 28 and suspended. Needle 31 is inserted into a vein. 32 is the blood indicator and 33 the solution indicator. When ready for injection, cap 25 is removed, which allows the medicinal solution to pass through sterile filter 30 and tubing 29 and 34. The filter has been used to retain any fragments of glass at 35, and to filter the solution as shown at 30.

1501 South Figueroa Street.

ACUTE POLIOMYELITIS WITH AN ISOLATED PALATINE PARALYSIS *

JOSEPH C. REGAN, M.D., BROOKLYN

The occurrence of an isolated palatine paralysis as the only paralytic manifestation of an attack of acute poliomyelitis is rare. Literature contains only one reference to a similar instance, as observed by Ivan Wickman[1] and recorded in his classic monograph. The details of the symptomatology are not given.

REPORT OF CASE

History.—A girl, aged 3½ years, admitted to the Kingston Avenue Hospital, Oct. 4, 1921, had had influenza, measles and whooping cough in the past three years. The family history was irrelevant. A tonsillectomy had been performed, September 15, but she recovered well from the operation and was not observed to have any signs of difficulty in swallowing or of regurgitation through the nose until the onset of the present illness. September 29, five days before admission, the patient complained of headache. On the following day, she had difficulty in swallowing liquids and her speech was nasal in character. With this condition there was some fever. October 2, the temperature reached 104 F., and the difficulty in deglutition of liquids was pronounced.

Physical Examination.—The patient was well developed and well nourished. She was not very ill, and was able to sit up in bed, stand and even walk fairly well. She answered questions in a normal way, but her voice had a pronounced nasal intonation. Macewen's sign was positive. The pupils were equal, moderately dilated, and they reacted to light and in accommodation. No facial assymetry existed. The tongue protruded in the median line. The throat was mildly congested, and the palate appeared immobile, hanging rather low, the uvula almost touching the tongue. There was no neck rigidity or pain on spinal flexion. The patellar reflexes could not be elicited, but the plantar responses were of a normal type for the age. The Kernig, Brudzinski and Oppenheim signs were negative. There was no ankle clonus. The muscular power of both upper and lower limbs was normal. Passive movements of the lower limbs, especially those employed in testing for a Kernig and contralateral Brudzinski sign, were painful, and the same was true of pressure over the nerve trunks of the legs. The heart and lungs and abdominal examinations were negative. On admission, the temperature was 101.6, the pulse 138 and the respiration 36.

Course.—The patient improved rapidly after admission, the temperature, pulse and respiration reaching normal on the third day. The only symptoms persisting were the palatine paralysis and the alteration in the patellar reflexes. The impairment of the function of deglutition improved, however, so that liquids were swallowed well, but a nasal intonation to the voice remained, which persisted until two months after the patient was discharged from the hospital.

October 5, lumbar puncture yielded 24 cc. of clear cerebrospinal fluid under moderate pressure. Examination showed: globulin, negative; Fehling's reaction, 3 plus; 65 cells per cubic millimeter; entirely small lymphocytes and mononuclears. October 13, lumbar puncture yielded 5 cc. of clear cerebrospinal fluid. Examination showed: globulin, negative; Fehling's reaction, 3 plus; a normal cell count; colloidal gold reaction, 001221½0000. The spinal fluid Wassermann reaction was negative. The blood count was: total leukocytes, 9,600; polymorphonuclears, 80 per cent, and lymphocytes, 20 per cent.

COMMENT

It has been emphasized and clinical observations during the 1916 epidemic of poliomyelitis seemed to support the contention that palatine paralysis was so rare in Heine-Medin disease that its presence or absence could serve as a valuable point in the differential diagnosis from postdiphtheritic paralysis. Since the occurrence of the epidemic, however, cases have been observed not infrequently in which a palatine or palatopharyngeal involvement was present in patients with the characteristic syndrome of acute poliomyelitis. It is therefore worthy of comment that other points in favor of diphtheritic paralysis besides a palatine paralysis must first be carefully looked for before eliminating entirely the possibility of Heine-Medin disease. Among these may be especially mentioned the history of severe previous initial membranous angina some weeks prior to the development of the paralysis, the gradual afebrile onset of the paralysis, the frequent presence of myocardial disease, and the normal character of the cerebrospinal fluid, so far as cytology is concerned. The very presence of palatine paralysis, while much more frequent by far in postdiphtheritic paralysis, and indeed characteristic, is not, however, pathognomonic and does not exclude poliomyelitis.

In the case recorded, therefore, it is considered that the diagnosis of postdiphtheritic paralysis could be ruled out for the following reasons: 1. The absence of a history of initial membranous angina as well as the signs of diphtheritic toxemia such as myocarditis, pallor, subjective sensory alterations and paralysis of accommodation. 2. The sudden onset, accompanied by decided constitutional reaction, in the way of fever. 3. The moderate lymphocytosis of the cerebrospinal fluid, which, from the experiences of most investigators who have studied the subject and from my own observations, is lacking in diphtheritic paralysis. 4. The persistence of palatine paralysis for several months. 5. The occurrence of this case during a small outbreak of acute poliomyelitis associated with other typical forms of the disease.

CONCLUSIONS

Palatine paralysis may occur in acute poliomyelitis and be the only paralytic evidence of the disease.

1298 Carroll Street.

"Swindlers Follow the Undertaker."—Under the title "Swindlers Follow the Undertaker," the Toledo Better Business Bureau says that many sucker lists are made from the death notices appearing in thousands of newspapers. The swindler who uses these lists writes a business letter, addressed to the deceased man or woman. The family opens this and finds it is an acknowledgment of an alleged order for a fountain pen or a rug, or for some shares of stock in some obscure corporation. Later, the goods are delivered and the family pays the bill, believing that the merchandise or the stock actually was ordered before the death of the deceased, when in fact nothing of the kind occurred. The bulletin might have added that right at the home of the deceased there are merchants and professional men who do not hesitate to present a bill against the estate for goods never actually furnished.—*J. Indiana M. A.*, Nov. 15, 1926.

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* From the Kingston Avenue Hospital, and the Department of Pediatrics, Long Island Medical College.

1. Wickman, Ivan: Acute Policmyelitis, Nervous and Mental Disease Monograph series no. 16, New York, 1913, p. 65.

Special Article

REPORT OF COMMITTEE ON OTO-RHINOLOGIC HYGIENE OF SWIMMING *

The Committee on Otorhinologic Hygiene of Swimming begs leave to submit the following report:

The healthfulness of swimming as an exercise is undeniable, but the human body lacks adaptation to sojourn in water, and means for its protection are, therefore, necessary.

Public health authorities, in most of the states, have promulgated adequate rules for the construction, maintenance and bacteriologic examination of swimming pools and bathing places.

In certain states, notices are now suggested or prescribed, "warning persons with colds, head infections, running noses or ears or catarrh, that swimming or diving tends to force infection into the sinuses or ears, resulting in serious, if not fatal, consequences." The use of such notices should be suggested to the public health authorities of all the states.

It is suggested that oiled wool or other effective methods of closing the external auditory meatus be advised, in order to prevent external otitis.

It is further suggested that improper swimming or diving habits (such as inbreathing when the head is more or less submerged; diving feet first with nostrils open; blowing the nose, coughing or hawking into the tank) should be forbidden by public health authorities.

Research has disclosed rapid lowering of body temperature and hence of resistance to infection, both from immersion and from exposure of the body in wet bathing suits; it is therefore suggested that a time limit of from forty-five minutes to one hour be placed on use of a pool by each bather in order that:

1. The number of bathers at any given time (bathing load) may be reduced.
2. The loss of body heat due to chilling may be minimized.

It is further suggested that the Bureau on Health and Public Instruction, and the editors of *Hygeia* be advised of these recommendations and requested to cooperate with a committee of this section in the preparation of standard posters, notices and articles on the proper technic of swimming and diving, including breathing habits; methods of getting rid of water; methods of keeping water out of the ears and nose; physical effects of exposure and immersion in normal adults and children, and the relation of swimming and diving to recurrent colds, chronic accessory sinus disease, otitis and deafness.

In this connection, the services of noted experts, both teachers and record holders in these valuable sports, should be secured, with the collaboration of members of this section. Suggested texts of posters and certain state regulations of approved purport are appended hereto.

Respectfully submitted.

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1. All bathers shall use shower baths, including soap, if necessary, before entering the plunge. (The plunge is not intended as a bath tub.)
2. Bathers who have been outside the bath house or plunge enclosure shall not reenter without passing through a foot bath and using a shower.
3. Bathers shall be forbidden to wear private bathing suits that are not properly laundered; light colored or undyed wool is suggested.
4. Women shall wear caps while in plunge.
5. Persons not dressed for bathing shall not be allowed on walks surrounding plunge, and bathers shall not be allowed in places provided for spectators.
6. No person suffering from a fever, cold, cough or inflamed eyes shall be allowed the use of the plunge. (These disorders may be transmitted to others.)
7. No person with sores or other evidence of skin disease, or who is wearing a bandage of any kind, shall be allowed the use of the plunge. (A bandage may conceal a source of infection.)
8. Spitting in, or in any other way contaminating, the plunge, and spitting on floors, runway, aisles or dressing rooms shall be prohibited.
9. Public combs or brushes shall not be furnished, and such articles left by bathers shall be permanently removed.
10. Eating within the plunge enclosure shall be prohibited.
11. Bringing or throwing into the plunge any objects that may in any way carry contamination, endanger safety of bathers, or produce unsightliness, shall be prohibited.

The majority of our patrons will observe these rules of their own accord and will render us a great service by reporting any infractions to the attendants. Any person failing to comply with the foregoing rules will be immediately expelled and denied the future privileges of the bath house.

RULES FOR SANITATION AND SAFETY OF SWIMMING POOLS

1. All swimming pools are to be maintained with a practical minimum amount of contamination. There shall be not more than 1,000 colonies per cubic centimeter of standard agar medium after incubating for twenty-four hours at 37 F. The *B. coli* content shall be such that gas is produced in not more than one and a half of standard lactic broth cultures after incubation for twenty-four hours with 1 cc. of water.
2. Water in the pool shall at all times of use be sufficiently transparent, under existing lighting conditions, that when the water surface is not excessively agitated by bathers, a person can stand at the side of the pool and see the bottom distinctly where the depth of water is 6 feet or less.
3. Facilities for adequate protection of the pool water against unnecessary sputum contamination by bathers shall be provided.
4. All persons known to be or suspected of being affected with infectious diseases shall be excluded from the pool.
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6. Construction and appliances shall be such as to reduce to a practical minimum the danger of drowning and of injury to bathers from falls or collisions.
7. Dressing rooms, hallways, toilet rooms, shower rooms and other places to which patrons of a bath house have access shall be kept clean and well ventilated at all times.
8. Bathing suits and towels, when distributed to bathers by the pool management, shall be clean and free from excessive bacterial contamination.
9. The management of the pool shall have printed and posted in conspicuous places about the establishment notices briefly informing patrons of the requirements to which they are subject in the maintenance of a safe and sanitary pool. A form of notice is suggested to pool operators; it should be so placed that all bathers cannot fail to read it before entering the pool.

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION IS NOW READY TO CONSIDER DEVICES FOR PHYSICAL THERAPY, AND SUCH CONSIDERATION OF APPARATUS WILL BE BASED ON THE FOLLOWING OFFICIAL RULES. A COPY OF THE OFFICIAL RULES AND A DESCRIPTION OF THE MANNER IN WHICH APPARATUS SHALL BE SUBMITTED TO THE COUNCIL WILL BE SENT ON APPLICATION.

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The term "device for physical therapy," as defined by the Council, shall mean any device by means of which apparatus is employed for the diagnosis or treatment of disease or the promotion of health.

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RULE 7. *Standardization.*—A device will not be accepted or retained unless it has satisfactorily passed tests under conditions acceptable to the Council.

RULE 8. *Objectionable Names.*—Proprietary names for physical therapeutic apparatus will be recognized only when the Council shall deem the use of such exclusive names to be in the interest of public welfare. Names that are misleading or suggest diseases, pathologic conditions or therapeutic indications will not be recognized. The continued use of well established or existing trade names must depend on the addition of a descriptive name on the label as the main title, with the trade name in parenthesis below the main title. After March 1, 1927, no new trade names for physiotherapeutic methods, systems of physical education, or apparatus for therapeutic or diagnostic use will be recognized except when they involve the application of a new physical agent, or a new essential application of a known physical agent, and otherwise comply with the rules of the Council.

RULE 9. *Patented Apparatus and Protected Names.*—If the device is patented—either the apparatus or its mode of application, or both—the number of such patent or patents must be furnished to the Council. Furthermore, if the name of a device is registered, or the label copyrighted, the registration (trademark) number and copy of the protected label shall be furnished the Council. In case of registration in foreign countries, the name under which the device is registered should be supplied.

RULE 10. *Useless Devices.*—A device will not be acceptable or retained which, because of its unscientific construction, is useless or inimical to the best interests of the public.

RULE 11. *Policies of Firms Detrimental to Rational Therapeutics.*—The Council will not retain, if already accepted, the appliances of a firm if, in the opinion of the Council, the policies of such firm are clearly detrimental to the welfare of the public.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1926, p. 358).

Cutter Laboratory, Berkeley, Calif.

Typhoid Prophylactic.—(See New and Nonofficial Remedies, 1926, p. 359.) Also marketed in packages of one syringe containing 1,000 million killed typhoid bacilli per cubic centimeter and in packages of one 20 cc. bottle containing 1,000 million killed typhoid bacilli per cubic centimeter.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1926, p. 331).

Parke, Davis & Co., Detroit.

Scarlet Fever Streptococcus Antitoxin Concentrated Globulin-P. D. & Co. (See New and Nonofficial Remedies, 1926, p. 332.) The product is now prepared by the method of Drs. Dick under U. S. patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc.). Also marketed in single 1 cc. vial packages (for the diagnostic blanching test) containing sufficient scarlet fever antitoxin for five blanching tests (Bio. 151).

Meaning of Education.—Education is the process by which the individual comes into continually increasing possession of himself and his powers through continually increased participation in the race achievement.—Kilpatrick: Source Book in Philosophy of Education, p. 273.

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RULE 6. *Dangers.*—The directions and the descriptive circulars accompanying a device must state plainly the limits of safety and the possibilities of danger attending its use.

RULE 7. *Standardization.*—A device will not be accepted or retained unless it has satisfactorily passed tests under conditions acceptable to the Council.

RULE 8. *Objectionable Names.*—Proprietary names for physical therapeutic apparatus will be recognized only when the Council shall deem the use of such exclusive names to be in the interest of public welfare. Names that are misleading or suggest diseases, pathologic conditions or therapeutic indications will not be recognized. The continued use of well established or existing trade names must depend on the addition of a descriptive name on the label as the main title, with the trade name in parenthesis below the main title. After March 1, 1927, no new trade names for physiotherapeutic methods, systems of physical education, or apparatus for therapeutic or diagnostic use will be recognized except when they involve the application of a new physical agent, or a new essential application of a known physical agent, and otherwise comply with the rules of the Council.

RULE 9. *Patented Apparatus and Protected Names.*—If the device is patented—either the apparatus or its mode of application, or both—the number of such patent or patents must be furnished to the Council. Furthermore, if the name of a device is registered, or the label copyrighted, the registration (trademark) number and copy of the protected label shall be furnished the Council. In case of registration in foreign countries, the name under which the device is registered should be supplied.

RULE 10. *Useless Devices.*—A device will not be acceptable or retained which, because of its unscientific construction, is useless or inimical to the best interests of the public.

RULE 11. *Policies of Firms Detrimental to Rational Therapeutics.*—The Council will not retain, if already accepted, the appliances of a firm if, in the opinion of the Council, the policies of such firm are clearly detrimental to the welfare of the public.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1926, p. 358).

Cutter Laboratory, Berkeley, Calif.

Typhoid Prophylactic.—(See New and Nonofficial Remedies, 1926, p. 359.) Also marketed in packages of one syringe containing 1,000 million killed typhoid bacilli per cubic centimeter and in packages of one 20 cc. bottle containing 1,000 million killed typhoid bacilli per cubic centimeter.

SCARLET FEVER STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1926, p. 331).

Parke, Davis & Co., Detroit.

Scarlet Fever Streptococcus Antitoxin Concentrated Globulin-P. D. & Co. (See New and Nonofficial Remedies, 1926, p. 332.) The product is now prepared by the method of Drs. Dick under U. S. patent 1,547,369 (July 28, 1925; expires 1942) by license of the Scarlet Fever Committee, Inc.). Also marketed in single 1 cc. vial packages (for the diagnostic blanching test) containing sufficient scarlet fever antitoxin for five blanching tests (Bio. 151).

Meaning of Education.—Education is the process by which the individual comes into continually increasing possession of himself and his powers through continually increased participation in the race achievement.—Kilpatrick: Source Book in Philosophy of Education, p. 273.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 11, 1926

FELLOWSHIP AND SUBSCRIPTION DUES FOR 1927

In every copy of The Journal this week is placed a colored slip. It is a reminder that Fellowship and subscription dues for the year 1927 should now be paid. Naturally, a number have already taken care of this payment and will disregard the slip so far as Fellowship and Journal subscriptions are concerned. However, the slip also lists all the special journals published by the American Medical Association and likewise *Hygeia*, the Health Magazine. Subscription prices are given and blank lines are left so that the form may be conveniently used to subscribe for any of these publications. Many physicians find that a subscription to one of the special journals is a fine holiday remembrance for a colleague. *Hygeia* likewise makes a fitting gift to a layman friend. All whose dues are not already paid in advance for 1927 should return the colored slip with remittance and thus save the Association the expense of sending individual bills.

GLANDULAR FEVER (INFECTIOUS MONONUCLEOSIS)

Modern medicine can cite a number of instances of the unquestionable advantage of calling attention to groups of symptoms or symptom-complexes that are either rare or of debated import. The inevitable consequent focusing of consideration on the problems concerned is likely to lead to the recognition of many similar instances, so that the feature of rarity is presently lost. This has been true, for example, in the case of the Stokes-Adams syndrome, which has become a familiar entity in practice. Discussions of uncertainties of diagnosis and etiology tend to elicit new features of clinical, pathologic or bacteriologic import that may presently transform debatable phenomena into a fabric of dependable knowledge. From this standpoint in particular it is significant to find renewed interest manifested in what has long been described as glandular fever since the pioneer account of E. Pfeiffer [1] in 1889. It refers to an acute, seemingly infectious disease of unknown causation, usually of short duration, characterized by fever, enlarged lymph glands, and the occurrence of numerous abnormal mononuclear cells in the circulating blood. The condition was doubtless recognized before Pfeiffer's publication, but the latter served most effectively to focus professional attention on the problem presented.

Not long ago glandular fever was described as "a disease of children." [2] One of the latest studies [3] gives the average age of fifty patients as 23.1 years. The group of clinicians at the State University of Iowa College of Medicine who have secured the records remark that conservative clinicians are rather slow to accept glandular fever as a disease entity because of the lack of a clear-cut, uniform clinical picture, because other infectious diseases may closely simulate glandular fever, because no etiologic agent has been demonstrated, and because the disease has not been definitely transmitted experimentally. There are nevertheless features that set so-called glandular fever off from other acute infections. Cases with a septic type of onset must be differentiated from pyogenic septicemia, typhoid, miliary tuberculosis, acute Hodgkin's disease, acute leukemia, influenza, dengue, epidemic thyroiditis and tularemia. Those associated with fever and membranous angina may resemble diphtheria, scarlet fever, Vincent's angina or follicular tonsillitis. Cases in which there are only fever, tender glands and a granular throat with moderate constitutional symptoms may be confused with paranasal sinus disease or mumps.

In differentiating glandular fever, much stress should be placed on the peculiar blood picture including the unusual colorless corpuscles. The total leukocyte counts are usually above normal at the onset and below normal during convalescence. A polymorphonuclear leukocytosis may occur at the onset, especially in cases in which there are marked febrile reactions. Sometime during the course the blood shows a rather marked increase in abnormal mononuclear cells. Many of these abnormal cells are lymphoid in nature, but some are no doubt endothelial leukocytes or monocytes. Occasionally the monocytes may outnumber the lymphoid cells. There often is an almost complete lack of normal small lymphocytes in the blood stream. The features mentioned justify the current designation of infectious mononucleosis.

From the earliest reports, the bacteriologic observations have been conflicting. This no longer is as surprising as a similar statement might have been a few years ago. Meanwhile scientific medicine has learned to accept reports of specific bacteriologic etiology with extreme reserve. Malta fever, which is caused by *Brucella melitensis*, is finding a counterpart in a closely related, if not identical undulant fever from *Brucella*

1. Pfeiffer, E.: Drüsenfieber, Jahrb. f. Kinderh. **29**: 257, 1889.

2. Boggs, T. R., in Osler's Modern Medicine **3**: 525, 1907.

3. Baldridge, C. W.; Rohner, F. J., and Hansmann, G. H.: Glandular Fever (Infectious Mononucleosis), Arch. Int. Med. **38**: 413 (Oct.) 1926.

abortus.[4] The causative agent of the malady now described as tularemia has only lately been ascertained with precision. The Iowa clinicians regard it as unwise at present to regard the composite of fever, a lymphadenopathic condition and mononucleosis dogmatically as a disease entity. That such a symptom complex exists they believe there can be no doubt. For purposes of study it seems best to them to set this group of cases apart from other similar infectious diseases, whether or not they are eventually proved to comprise a single disease entity.

COURAGEOUS DEVOTION OF SCIENTIFIC INVESTIGATORS

The rapidly growing evidence of the unexpectedly widespread occurrence of tularemia infection with *Bacterium tularense* has been stressed on several recent occasions in THE JOURNAL.[5] The United States Public Health Service has regarded the malady of sufficient moment to maintain a tularemia laboratory, located at Hamilton, Mont. The disease has been spread insidiously. In nature it occurs as a fatal bacteremia of various rodents, especially rabbits. It is transmissible to man as an accidental infection by the bite of an infected blood-sucking insect or tick, or by the lodgment on his hands of the blood or internal organs of an infected rodent, as in the case of marketmen, cooks, hunters or laboratory workers.

Francis [6] of the United States Public Health Service, himself a pioneer in the investigation of tularemia, has pointed out that it is the only disease of man that has been elucidated from beginning to end by American investigators alone. These investigators have worked in widely separated states, and in most instances each made his first contribution while in ignorance of the work of the others.

The progress already recorded, leading to a more adequate appreciation of a formerly unsuspected malady and affording the beginning of a rational protection against it, has not been secured without considerable suffering and unfeigned danger. Eighteen cases of tularemia have thus far been reported in laboratory workers, including a varied personnel of physicians, bacteriologists and entomologists, the latter engaged in the study of insect carriers of the disease.[7] Americans are prone to laud the enterprise and intrepidity of heroes who do not hesitate to risk their lives in attempts to reach the poles, to conquer the highest altitudes, and to penetrate into danger zones of varied sorts. Why shall we not herald with equal pride the glory of those scientific workers who are daily facing unrecognized dangers of the gravest sort in their efforts to conquer insidious diseases? The mantle of distinction should fall on the shoulders of these modest medical explorers, many of whom have suffered severely through chance infection "in the line of scientific duty." Even their names for the most part have not been made public. What finer spirit of service is on record?

Trained investigators are not, of course, reckless in the face of the known dangers of infection. In the cases of laboratory infection already recorded, the etiologic agent gained entrance to the body without leaving the slightest evidence of a local lesion or without causing glandular enlargement of any consequence. The clinical picture was more like that of typhoid than of any other infection. The portal of entry of *Bacterium tularense* in these cases is unknown, there being no evidence in any of them to indicate the primary seat of infection. The obvious sources of danger were the nasal secretions and urine of rabbits, the excreta of the ticks, and the possibility of contamination with the body fluid of an injured tick. The actual investigators concerned do not regard these as tenable explanations. We are thus brought to a consideration of another possibility; namely, inhalation or droplet infection from sick animals. Until the problem of transmission under all eventualities is clearly solved, the need of heroic investigators will not be over. History shows that they will be forthcoming even though their performances are not announced amid a deafening din of ardent admirers.

BILIARY STASIS

The questions of cholecystectomy versus cholecystostomy and of both versus nonsurgical drainage of the gallbladder [1] have been held in abeyance by conservative thinkers pending the interpretation of recently acquired knowledge of biliary physiology and pathology. Wilke [2] has recently harmonized some of this new knowledge with the conditions personally found in the operating room. The gallbladder with stasis, in a large proportion of cases, is the result either of hypertonia or hypotonia. Understanding of the mechanism concerned requires a knowledge of the anatomy and physiology of the biliary tract. Elsewhere in this issue [3] it is shown that the gallbladder is not a passive organ and that its wall contains an abundance of smooth muscle. Another muscular structure of importance is the sphincter of Oddi, which surrounds the outlet of the common duct at the point where it joins with the pancreatic duct to form the

4. Carpenter, C. M., and Merriam, H. E.: Undulant Fever from Brucella Abortus, J. A. M. A. **87**: 1269 (Oct. 16) 1926.

5. Some Modes of Transmission of Tularemia, Current Comment, J. A. M. A. **78**: 896 (March 25) 1922; The Distribution of Tularemia, ibid. **81**: 665 (Aug. 25) 1923. Verbrycke, J. R.: Tularemia, ibid. **82**: 1577 (May 10) 1924. Shelton, T. S.: Tularemia, ibid. **84**: 1019 (April 4) 1925. Francis, Edward: Tularemia, ibid. **84**: 1243 (April 25) 1925. Pfunder, M. C.: Primary Tularemia of the Eye, ibid. **85**: 1061 (Oct. 3) 1925. Brown, W. L., and Brown, C. P.: A Case of Tularemia, ibid. **85**: 2033 (Dec. 26) 1925. Maclachlan, W. W. G.; Fetter, W. J., and Cratty, A. R.: Two Cases of Tularemia, ibid. **86**: 749 (March 13) 1926. Lavan, J. L.: Tularemia: Report of Five Cases, ibid. **86**: 839 (March 20) 1926.

6. Francis, Edward: Tularemia, J. A. M. A. **84**: 1243 (April 25) 1925.

7. Parker, R. R., and Spencer, R. R.: Six Additional Cases of Laboratory Infection of Tularemia in Man, Pub. Health Rep. **41**: 1341 (July 2) 1926. Dieter, L. V.: A Case of Tularemia in a Laboratory Worker, ibid., p 1355.

1. Lyon, B. B. V.: Nonsurgical Method of Drainage of Biliary Tract as Aid in Diagnosis and Treatment of Gallbladder Disease, Rhode Island M. J. **4**: 76 (May) 1921.

2. Wilke, D. P. D.: On the Functions of the Biliary Passages in Relation to Their Pathology, Lancet **2**: 713 (Oct. 2) 1926.

3. Emmel, V. E.: Emptying of the Gallbladder, this issue, p. 2019.

papilla of Vater. The innervation of this apparatus, according to Wilke, results in the following action:

1. Slight stimulation of the vagus causes contraction of the gallbladder with a relaxation of the sphincter of Oddi.
2. Strong stimulation of the vagus causes a firmer contraction of the gallbladder, especially the neck, and a spasm of the sphincter of Oddi.
3. Stimulation of the sympathetic causes a relaxation of the gallbladder and ducts, and a contraction of the sphincter.
4. The effect of strong vagus stimulation can be counteracted by an intravenous dose of atropine and augmented by pilocarpine.

With certain disturbances of this apparatus, spasm of the sphincter and relaxation of the gallbladder wall will be unduly prolonged. These conditions once established, stasis in the biliary tract becomes a corollary. Thereupon, the causation of some cases of gallbladder disease is clear. The colloid state in which cholesterol is normally held by the presence of the bile acids may be disturbed and the well known single cholesterol stone may result. Infection may develop consequent on stasis and the presence of the calculus. When this occurs, the resultant irritation increases the sphincteric spasm and the accompanying pain.

The generally recognized biliary disturbances of pregnancy and of arteriosclerosis may also be related to spasm of the sphincter of Oddi. These conditions are associated with increase in the blood cholesterol, which in turn brings about hypersensitiveness of the sphincter. This has been shown to occur even in the early months of pregnancy. The morning sickness and biliary attacks characteristic of this period are therefore probably not due in all cases to pressure exerted by the rising uterus. If the foregoing neuromuscular mechanism is accepted as the cause of various biliary disorders, it may also account for the rare condition of cystic dilatation of the extrahepatic bile ducts. Certainly, a precedent for such an assumption is found in other viscera, dilatation of which may likewise be caused by autonomic imbalance. The conditions referred to are cardiospasm, Hirschsprung's disease, congenital pyloric stenosis and some forms of hydronephrosis.

Persistence of colic after cholecystectomy is more difficult to explain. Certain it is that some patients continue to suffer after the operation, and another laparotomy is performed with the expectation of finding an overlooked and impacted stone. Often, however, a stone is not found and the stump of the cystic duct is dilated. Spasm of the sphincter of Oddi would explain these symptoms and anatomic observations. Furthermore, from one point of view, logic based on the doctrine of the contrary innervation of the biliary apparatus would tend to support this view. That is, if the sphincter of Oddi does not relax until the gallbladder contracts, and the gallbladder, having been removed, cannot contract, the assumption might be that the sphincter would remain in tonic contraction. As a matter of fact, the opposite is usually the course immediately after cholecystectomy. Incontinence of the sphincter is then the rule. To make the matter more difficult, logic will also support the finding of a relaxed sphincter. It seems entirely possible that the stimuli which originate in the cut and irritated ends of the nerves that formerly supplied the gallbladder may have the same reflex effect on the sphincter of Oddi as stimuli which were supplied by contraction of the gallbladder itself. Since the doctrine of contrary innervation is in dispute, "it would be interesting to know what factors govern the behavior of Oddi's sphincter after cholecystectomy." [4]

Current Comment

COUNCIL ON PHYSICAL THERAPY

For more than a year the Council on Physical Therapy of the American Medical Association has been considering seriously the rules to be followed in action on devices submitted to it for inclusion in its list of approved therapeutic apparatus. The official rules are now published in this issue of THE JOURNAL. They have been adopted primarily with a view to protecting the medical profession and the public against fraud, undesirable secrecy and objectionable advertising in connection with the manufacture and sale of apparatus and methods for physical therapy. However, the rules will also be of the greatest service to manufacturers of such devices in standardizing their apparatus and in promotion along sound lines. The devices and methods that have been found acceptable, as conforming to the rules of the Council, will be described from time to time in the department of THE JOURNAL devoted to the work of this council, and listed later in a book of approved devices, similar to the book issued by the Council on Pharmacy and Chemistry for new and nonofficial remedies that have been accepted. It is hoped that the medical profession will give consistent support to this effort for sound therapy. Physicians may well follow in their choice of apparatus and in their work the opinions of the Council on Physical Therapy as to what is reliable.

A FRIEND OF HYGEIA

November 30, the headquarters of the American Medical Association received from a physician in Philadelphia a check for $501, with a request that this be applied in payment for subscriptions to *Hygeia* to be sent to public libraries, the Y. M. C. A., the Y. W. C. A., and college libraries in certain states. With unusual modesty, he asks that his name be not mentioned in connection with these gifts, but that the institutions concerned be informed that the subscription comes to them from a "friend of *Hygeia*" who appreciates its value for the public. The headquarters office of the American Medical Association herewith accepts this public spirited gift, receiving the subscriptions as an indication of the approval of a physician of the material published in *Hygeia*, and as a recogni-

4. Biliary Physiology and Pathology, Lancet 2:713 (Oct. 2) 1926.

tion of the fact that that periodical is doing all that it can to spread the sound gospel of preventive medicine and medical science to the public. The letter comes as distinct encouragement from one who will be considered hereafter not only as a "friend of *Hygeia*" but as a public spirited and philanthropic physician.

ALIMENTARY FISTULAS AND BLOOD CHLORIDE

The importance of maintaining the chloride content of the blood at its normal or physiologic level is beginning to be recognized in relation to certain clinical emergencies. Under ordinary conditions the loss of chloride with the stools is negligible, whereas the elimination through the kidneys is, under routine circumstances, strikingly proportionate to the chloride intake. The chloride ions find their way into the alimentary tract in the gastric juice and also in the intestinal secretions; but this quota is returned under normal conditions through reabsorption to the blood stream. When, however, situations are created that prevent these usual sequences of chloride migration in the body, undesirable upsets may ensue. Thus, as has been pointed out,[1] the chemical changes in the blood that are associated with high intestinal stasis and with acute duodenal fistula consist of increasing alkalosis, decreasing concentration of chlorides in the blood serum, and progressive rise of blood urea. Similar changes have been demonstrated more recently at the Mayo Foundation[2] as a result of experimental acute gastric fistula. The changes in this condition are, however, as a rule more profound than in the disturbances of the gastroenteric tract already mentioned. Studies of the fistulous fluid revealed a loss of chlorides sufficient to account for the decreased chloride content of the blood. It appears that the alkalosis resulting from gastric fistula is due to a loss of acid from the stomach, with liberation of corresponding amounts of alkali retained in the body or excreted. The establishment of these facts regarding impoverishment of the body chlorides—a possibility scarcely conjectured only a few years ago as significant—has pointed the way to beneficial treatment. Administration of 1 per cent solution of sodium chloride—physiologic sodium chloride solution—appears to avert, in some measure at least, the untoward symptoms, whereas other isotonic solutions do not accomplish the same benefit, though they may facilitate the elimination of urea. The significance of the noticeable accumulation of this catabolite is not yet clear. Reduction of blood chlorides may occur not only from the loss of secretion through a fistula but also as a result of their excretion into the lumen of the intestinal tract. Introduction of concentrated salt solutions is not effective in the way that the more dilute solutions are. The experiments lead to the conclusion that fluid balance plays some part in the toxemia accompanying duodenal fistula. In any event, intravenous injection of a 1 per cent solution of sodium chloride should find a place among the nonoperative methods of treatment.

1. Walters, Waltman; Kilgore, A. M., and Bollman, J. L.: Changes in the Blood Resulting from Duodenal Fistula, J. A. M. A. **86**: 186 (Jan. 16) 1926.
2. Walters, Waltman; and Bollman, J. L.: Experimental Acute Gastric Fistula, Arch. Surg. **13**: 578 (Oct.) 1926.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE AND HOSPITALS

Preliminary Program of Meetings to be Held in Chicago, Feb. 14 to 16, 1927

The next conference of the Council on Medical Education and Hospitals will be held at the new Palmer Hotel, Chicago, Feb. 14 and 15, 1927. The preliminary program follows:

MONDAY, FEBRUARY 14

CHANGES NEEDED IN THE MEDICAL CURRICULUM. Dr. Ray Lyman Wilbur, president of Stanford University, Stanford University, Calif.

THE UNIVERSITY'S LARGER FUNCTION IN MEDICINE. Dr. Max Mason, president of the University of Chicago, Chicago.

OBSERVATIONS ON THE TREND OF MEDICAL EDUCATION. Dr. Charles F. Martin, dean of McGill University Faculty of Medicine, Montreal, Quebec.

PROGRESS OF THE COMMISSION ON MEDICAL EDUCATION. Dr. Willard C. Rappleye, director of study, Commission on Medical Education, New Haven, Conn.

TEACHING OF PUBLIC HEALTH IN THE MODERN MEDICAL SCHOOL. Dr. Waller S. Leathers, professor of preventive medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

TUESDAY, FEBRUARY 15

A HOSPITAL DEPARTMENT OF PHYSICAL THERAPY. Dr. Frank B. Granger, physician-in-chief for physical therapy, Boston City Hospital, Boston.

THE DUTY OF THE HOSPITAL STAFF TO THE INTERN. Dr. George Edward Follansbee, chief of staff, St. Alexis Hospital, Cleveland.

HOSPITAL AND HEALTH CENTERS FOR RURAL COMMUNITIES. Dr. Watson S. Rankin, director of the hospital and orphans' section of the Duke Endowment, Charlotte, N. C.

THE HOSPITAL FUNCTION IN GRADUATE MEDICAL EDUCATION. Dr. N. P. Colwell, Secretary of the Council on Medical Education and Hospitals, Chicago.

GRADUATE MEDICAL EDUCATION IN EUROPE IN 1926. Dr. Louis B. Wilson, director of the Mayo Foundation of Medical Education and Research, Rochester, Minn.

TAKING MEDICAL EDUCATION TO THE PRACTITIONER. Dr. Charles A. Gordon, chairman of the Committee on Public Health and Medical Education of the Medical Society of the State of New York, Brooklyn.

Wednesday, February 16, the Federation of State Medical Boards will hold its annual meeting, the preliminary program of which is as follows:

RELATION OF THE QUARTER SYSTEM TO MEDICAL LICENSURE. Dr. N. P. Colwell, secretary of the Council on Medical Education and Hospitals of the American Medical Association, Chicago.

THE TEACHING OF PREVENTIVE MEDICINE IN RELATION TO LICENSURE REQUIREMENTS. Dr. Waller S. Leathers, professor of preventive medicine, Vanderbilt University School of Medicine, Nashville, Tenn.

BASIC SCIENCE LAW. Dr. Edward Evans, chief-of-staff, St. Francis Hospital, LaCrosse, Wis.

REPORT OF THE FIRST YEAR'S STUDY BY THE NEW COMMISSION ON MEDICAL EDUCATION. Dr. Willard C. Rappleye, director of study, Commission on Medical Education, New Haven, Conn.

ENFORCEMENT OF A MEDICAL PRACTICE ACT. Dr. T. J. Crowe, secretary of the Texas Board of Medical Examiners, Dallas, Texas.

PRACTICAL ADMINISTRATION OF THE ENFORCEMENT OF THE LAW AGAINST ILLEGAL PRACTITIONERS. Dr. Harold Rypins, secretary of the Board of Medical Examiners of the State of New York, Albany, N. Y.

SAFEGUARDING STATE BOARD RECORDS. Dr. Charles B. Pinkham, secretary of the California Board of Medical Examiners, Sacramento, Calif.

RECIPROCITY VERSUS INTERSTATE ENDORSEMENT. Dr. G. M. Williamson, secretary of the North Dakota Board of Medical Examiners, Grand Forks, N. D.

This meeting will be preceded on Tuesday evening by the annual dinner of the federation.

THE WASHINGTON SESSION

Special Exhibit by the Section on Dermatology and Syphilology

At the Washington Session, the Section on Dermatology and Syphilology will again be represented in the Scientific Exhibit. The committee in charge is composed of F. J. Eichenlaub, Washington, D. C.; Clark W. Finnerud, Chicago, and Fred D. Weidman, Philadelphia, chairman. According to the plans of the committee, the section this year will concentrate on two subjects: Fungus Diseases and Dermatologic Quackery. The latter includes such topics as paraffin injections, face lifting and roentgen-ray treatment of hirsuties. As in previous years, it will be the aim of the section to make the exhibit of interest and value to the profession at large as well as to the members of the section.

Circular letters explaining the exhibit together with application blanks will be mailed to those who registered at any

of the last five sessions. Any who desire this literature may obtain it by communicating with Dr. Fred D. Weidman, Medical Hall, University of Pennsylvania, Thirty-Sixth Street and Hamilton Walk, Philadelphia. All applications for this special section exhibit must be sent to Dr. Weidman by February 15.

Exhibit on Gonorrhea by the Section on Urology, with the American Social Hygiene Association Cooperating

At the Dallas Session the Section on Urology authorized a special committee to undertake a section exhibit on gonorrhea for the Washington Session. Cooperating with this committee is the American Social Hygiene Association. The committee appointed by the section is composed of Drs. Francis R. Hagner, Washington, D. C., chairman; E. L. Keyes, New York, and Alexander Randall, Philadelphia. Dr. Walter M. Brunet represents the American Social Hygiene Association.

Further announcements of the scope of the exhibit will appear at a later date.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—A bronze tablet in honor of the late Dr. Richard P. Huger, Anniston, will be placed in St. Michael's Episcopal Church in the near future.——Dr. William D. Sellers has been appointed a municipal physician for Birmingham. ——Dr. David C. Jordon, Guntersville, has been appointed health officer of Marshall County.

Chiropractor Found Not Guilty—Unusual Record.—Although the court charged the jury to find chiropractor Dwight L. Evans of Anniston guilty of practicing medicine without a license, it is reported, he was acquitted. This was said to be the seventh time that Evans has been in court in four years. Quo warranto proceedings previously resulted in an injunction issued by the lower court, which, on appeal, the state supreme court reversed on a technicality. Three of Evans' cases were compromised while pending; twice he was acquitted after the jury had been affirmatively charged, and another time quo warranto proceedings were withdrawn and others substituted when the judge ruled that they were not properly drawn.

CALIFORNIA

Health Officer Appointed.—Dr. James R. Scott, Albuquerque, N. M., has been appointed health officer of the city of Berkeley to succeed Dr. Frank L. Kelly, who has been acting health officer since the resignation of Dr. William P. Shepard. Dr. Scott is a graduate of the University of California Medical School.

License Restored.—The state board of medical examiners announced, October 30, it is reported, the restoration of the license to practice medicine in California of Dr. Herbert E. Bogue, Sawtelle. Dr. Bogue's license is said to have been revoked recently following his conviction in connection with the disposal of narcotics. Dr. Bogue has been placed on probation by the board for five years.

Hospital News.—The Dameron Hospital Corporation is constructing the first unit of what will ultimately be a new hospital at Magnolia and Lincoln streets, Stockton, for which the corporation recently acquired additional property. The first unit will comprise a three story, fire and sound-proof, twenty-four bed hospital building, a nurses' home and a new mechanical building. Dr. Herbert S. Chapman is president of the corporation.

Society News.—At the recent meeting of the Southern California Medical Association, Dr. Charles T. Sturgeon was elected president for the ensuing year, and Dr. William J. Norris, Los Angeles, secretary-treasurer.——Two hundred physicians attended the third annual Scripps Metabolic Clinic Lecture before the San Diego County Medical Society, November 18, given by Dr. Elliott P. Joslin, Boston, on "Outlook for the Diabetic."

Unlicensed Practitioner Fined.—Dr. Schuyler C. Drollinger, Los Angeles, was recently reported fined $500 on a charge of violating the medical practice act. Drollinger is said to have related that he did not know whether he was registered in California or not, but that he was licensed in Illinois, Michigan and Ohio. The sentence was suspended for two years on condition that he does not violate the medical practice act during that time. According to records in these headquarters, Schuyler C. Drollinger graduated from the Eclectic Medical Institute, Cincinnati, 1881, and was licensed in Michigan in 1900; he claimed license in Ohio, also.

Popular Medical Lectures.—Stanford University Medical School announces that the forty-fifth course of popular medical lectures (illustrated) will be given at Lane Hall, Sacramento Street near Webster, San Francisco, on alternate Friday evenings, beginning Jan. 14, 1927. The series will include:

Causes and Treatment of Hay-Fever and Asthma. Dr. Samuel H. Hurwitz.
The Rôle of Heredity in Disease. Charles H. Danforth, Ph.D.
Relation of Dental Infection to Disease. John A. Marshall, D.D.S.
The Psychology of Disease Symptoms. Prof. Walter R. Miles, Ph.D.
What About Irregular Teeth? Fred Wolfsohn, D.D.S.
Influence of Good Postural Conditions on Health. Dr. Harry L. Langnecker.

COLORADO

Personal.—Dr. Henry Sewall, Denver, gave a lecture at the Mayo Foundation, recently, on "Visualizing Medical History: the Physiology of Respiration."——Dr. Edouard Rist, Paris, France, gave a lecture on tuberculosis to physicians and others in Denver, recently, under the auspices of the Denver Tuberculosis Society.

Decrease in Death Rate.—The death rate in Colorado for 1925 was 12.07 per thousand of population, as compared with 12.47 in 1924. According to the department of commerce, the decrease was accounted for by decreases in the death rates of pneumonia, tuberculosis and measles. There were increases in the death rates from influenza, heart disease, whooping cough and enteritis.

CONNECTICUT

Professorship in Psychiatric Nursing Established.—Yale University, New Haven, announces the appointment of Miss Effie J. Taylor, a member of the faculty of the Yale School of Nursing, as professor of psychiatric nursing. This professorship was established in response to the demand for nurses qualified by special preparation for "this important and interesting aspect of disease." Professor Taylor was director of the army school of nursing at Camp Meade during the World War, and for seven years was director of nursing service at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore. The Yale school of nursing was established in 1923 by a gift from the Rockefeller Foundation. It has focused attention on the educational training of the student, eliminating many routine tasks that contribute little to training; under this plan, the period of nursing preparation has been shortened to twenty-eight months.

FLORIDA

Personal.—Dr. Burrel C. Wilson, formerly director of the Grayson County (Kentucky) Health Unit, has been appointed field medical officer for the state board of health of Florida for the Jacksonville District.——Dr. Erle L. Biggs has been elected health officer of the city of Starke.——Dr. Joseph Y. Porter, Sr., has been elected president of the Key West Chamber of Commerce for the fifth consecutive year.

Red Cross Disaster Relief.—All previous records for speed in disaster rehabilitation have been exceeded in the Florida hurricane area, the director of disaster relief of the American Red Cross reports. Awards for the reconstruction of homes were being granted at the rate of 135 a day, and 20,000 families have registered as applicants for relief. Up to November 15, aid had been extended to 13,500 families, and the permanent rehabilitation of 3,000 families had been completed. The emergency period was officially closed, November 4, the report states, with the start of rebuilding at Moore Haven, which town had been completely flooded and only about that date became habitable.

ILLINOIS

Physicians Guilty of Liquor Violations.—Drs. Ben Russell and J. J. Moran of Buda, who were arrested last summer for violating the liquor laws, pleaded guilty in the county court early in November, it is reported. The judge fined Dr. Russell $400 and costs, and took the case of Dr. Moran under advisement.

State Antitoxin Agents.—The Department of Public Health of Illinois has notified practicing physicians of the state where they may obtain diphtheria toxin-antitoxin without charge, and at the expense of the state. The notice includes a list of these so-called state antitoxin agents, at least one being in each county seat, and a number of municipalities have them. These agencies keep a supply of toxin-antitoxin on hand, as well as such other material as typhoid vaccine, silver nitrate solution and diphtheria antitoxin. At present, several lay organizations are assisting in a state-wide educational program in the use of toxin-antitoxin, and they are seeking the endorsement and support of physicians.

Eleven Hundred Cases of Smallpox This Year.—There had been 1,100 cases of smallpox reported to the Illinois Department of Public Health this year up to November 30; smallpox was then less prevalent than it had been for years at the same season; there were only five cases reported during October, and about twenty in November. The director states, however, that outbreaks frequently begin in December; every year in December a number of communities must decide whether to vaccinate or have smallpox in their midst. During 1925, there were 1,625 cases reported, and in 1,274 of them there had never been a successful vaccination; the remaining patients had either been vaccinated more than seven years previously or gave no definite history of vaccination at all. That Chicago is well vaccinated is indicated by the fact that only 1,500 of more than 30,000 cases reported in Illinois in the last eight years occurred in Chicago; only seventy of those were reported during 1925.

Chicago

Personal.—Drs. Karl A. Meyer and Raymond W. McNealy have been appointed associate professors of surgery, it is reported, at the Northwestern University Medical School.—— Dr. Otto L. Schmidt has been appointed a member of the board of education of Chicago.——Dr. Homer W. Humiston has been appointed a fellow in surgery at the Mayo Clinic, Rochester, Minn.

Institute of Medicine.—E. H. Lewinski-Corwin, Ph.D., New York, was the guest of the Institute of Medicine at the eleventh annual meeting, City Club, December 7; the subject of his address was "Community Service as Developed by the New York Academy of Medicine." Dr. Anton J. Carlson, University of Chicago, delivered his presidential address on "The Institute of Medicine, Past and Future." The third Ludvig Hektoen lecture of the Billings Foundation will be delivered at the City Club, January 28, by Miss Maud Sly, member of the Otho S. A. Sprague Memorial Institute, University of Chicago, on "Studies in the Nature and Inheritability of Cancer."

Chemistry Research Laboratory Endowed.—The University of Chicago announces a gift of $415,000 from George H. Jones, director of the Inland Steel Company, for the construction and endowment of a chemical research laboratory, which will be the first unit of the new laboratories to be devoted to research in chemistry and its relation to medicine and industry. The laboratory, named in honor of the donor, will have an important bearing on the $20,000,000 medical program which the university has undertaken to provide. It will be characterized by small private rooms for research where elaborate instruments can be used without disturbance, and will permit research in such fields, not now extensively cultivated at the university, as colloid chemistry, synthetic organic chemistry and photosynthesis. When the new buildings are finished, Kent Laboratory will be used wholly for undergraduate work.

Judge Scores Dr. Carter's Circular.—Following the recent revocation of his license to practice, Franklin O. Carter, M.D., the eye quack, was refused a writ of certiorari by Judge Joseph B. David, December 4, and was forbidden to practice pending an appeal to the supreme court, it is reported. When shown one of Dr. Carter's advertising circulars, the judge is reported to have said that "any doctor putting out a circular like that should be in jail. If he got money from any patient as a result of such an advertisement, he should be prosecuted for obtaining money under false pretenses." Carter's license was revoked by the state department of registration and education after testimony had been offered to show that, following an operation for strabismus, the patient became blind in one eye. The case of Carter and his quackish activities was dealt with in THE JOURNAL, July 3.

Society News.—The Illinois Society of Mental Hygiene will meet at the City Club, December 14; among others, Dr. Smiley Blanton, director, child guidance clinic, Minneapolis, will speak on "Speech and the Emotional Life." There will be a dinner at 6:15 ($1.50 a plate). Dr. Frankwood E. Williams, New York, director, National Committee for Mental Hygiene, addressed the annual meeting, November 18, on "Problems of Adolescence."——Dr. Morris Fishbein gave the second lecture in the medicohistorical series at the University of Illinois College of Medicine, December 1, on "Growth of Medical Ethics."——Dr. John H. Kellogg, Battle Creek, Mich., will address the Chicago Medical Society, December 15, on "Some Dangerous Diet Fads." The December 8 meeting was addressed by the following members of the faculty of the University of Illinois: Drs. Herman M. Adler, Julius H. Hess, Carl A. Hedblom and Robert W. Keeton.—— The Chicago Tuberculosis Society will be addressed by Dr. Ralph C. Matson, Portland, Ore., December 17, Brevoort Hotel, on "Operative Collapse in the Treatment of Pulmonary Tuberculosis."

INDIANA

Hospital News.—The new Mercy Hospital, Elwood, erected by the Sisters of St. Joseph, was dedicated, November 14.—— The Union Hospital, Terre Haute, has opened a new $30,000 maternity ward.——The Lafayette Home Hospital, Lafayette, is conducting a campaign for $250,000.

Millions for Charity.—A gift of $3,500,000 to be used in Indiana for charitable, educational and public work was announced, November 20, by the widow and brothers of the late Edmund B. Ball of Muncie. The Ball Brothers Foundation, the directors of which for five years will be members of the Ball family, will administer the trust. After five years, the directorate will include also persons named by the governor of Indiana, the president of Indiana University and the president of the Muncie Normal School. This is said to be the largest gift of its kind ever made in Indiana.

District Meeting.—The Tenth Councilor District Medical Society met at Hammond, November 17. The following physicians from Chicago were among the speakers: Carl A. Hedblom, "Acute Abdominal Conditions"; Daniel Eisendrath, "Diagnosis of Genito-Urinary Tract Lesions and Significance of Pyuria"; John S. Coulter, "Physiotherapy and Industrial Surgery"; Edward Oliver, "Diagnosis and Treatment of the Commoner Skin Diseases"; Joseph L. Baer, "Problems in Obstetrics," and Frank Smithies, "Pathologic Gallbladder: Its Significance and Management from the Standpoint of the Internist."

MARYLAND

Personal.—Dr. Alfred E. Cohn, Rockefeller Institute for Medical Research, gave a public lecture, November 15, at the School of Hygiene and Public Health, Johns Hopkins University, Baltimore, on "Heart Disease from the Point of View of the Public Health."——Dr. William H. Howell, assistant director and professor of physiology, Johns Hopkins University School of Hygiene and Public Health, will succeed Dr. William H. Welch as director, it is reported. Dr. Welch recently resigned to accept the chair of medical history at the university.

Portraits Presented.—At the meeting of the Baltimore City Medical Society, held November 15 at the Medical and Chirurgical Faculty Building, Dr. Walter D. Wise presented a portrait of Dr. Archibald C. Harrison, which was accepted on behalf of the faculty by Dr. Josiah S. Bowen, president. Following the presentation, Dr. Alexius McGlannan spoke on "The Effect of Acute Perforation on the Course of Peptic Ulcer," and Dr. Lewellys F. Barker, on "Heredity in the Clinic." A buffet supper was held after the meeting. An oil painting of the late Dr. Thomas B. Johnson, of Frederick, Md., and a former president of the Medical and Chirurgical Faculty, has been presented to the Frederick City Hospital Association by Mrs. L. Victor Baughman.

Conference on Child Study.—The national conference of the Child Study Association of America met at the Hotel Belvedere, Baltimore, November 30; more than 2,000 delegates from all parts of the country were expected. The sessions were under the joint auspices of the Baltimore district of the association and the national association. There was a banquet on the opening night at which Dr. Lewellys F. Barker, professor emeritus of medicine, Johns Hopkins Hospital, presided. During the conference, lectures were given by educators and students of child psychology and mental hygiene; among the speakers were Drs. Leslie B. Hohman and Esther L. Richards; Buford J. Johnson, Ph.D., Johns Hopkins University; Dorothy Stimson, Ph.D., dean of Goucher College, and Emmet M. Sipple, headmaster of the Park School.

MICHIGAN

Diphtheria Incidence Still Above Normal.—From October 5 to November 14, a total of 80,499 first doses of toxin-antitoxin were given in the effort to immunize children of Detroit against diphtheria. There are in the city more than 270,000 children in the age group most susceptible to diphtheria, and about 50,000 of these were immunized before the present campaign started. The city department of health is maintaining clinics throughout the city where children can be taken to be immunized. The report of November 13 shows a drop from 120 cases of diphtheria to 106 during the week. The norm was said to be eighty.

MINNESOTA

Personal.—Dr. Geza J. V. E. Kertesz, formerly of Minneapolis, and South Shore, S. D., has assumed charge of the Holman Hospital, Pine River.——Dr. Benjamin F. Simon, formerly city health officer of St. Paul, is the chief of staff of the new Roosevelt Hospital, St. Paul.——Dr. Charles E. Riggs, St. Paul, addressed the regular meeting of the Minnesota Academy of Medicine at the Town and Country Club, November 10, on "Encephalitis."

Mayo Foundation Lectures.—Donald D. Van Slyke, Ph.D., New York, editor of the *Journal of Biological Chemistry*, lectured at the Mayo Clinic, Rochester, November 22, on "Urea Excretion in Nephritis"; Dr. Oscar Gans, professor of dermatology, University of Heidelberg, gave a series of five lectures on "Skin Manifestations in Metabolic Disorders" at the clinic, beginning November 16; Dr. S. Judin, professor docent of the University of Moscow, lectured, November 12, on "Medical Conditions in Russia."

MISSOURI

Medicinal Plant Garden.—The St. Louis College of Pharmacy has opened a campaign to raise $300,000 to erect a new building, and to establish a medicinal plant garden. It has already received a gift of $50,000 from William R. Warner and Company, manufacturing pharmacists, St. Louis and New York, and $25,000 from the Lambert Pharmacal Company, St. Louis.

Society News.—The St. Louis Medical Society has elected Dr. Charles A. Vosburgh president for 1927; Drs. John Green and William H. Mook, vice presidents, and Dr. Roland S. Kieffer, secretary.——Dr. James R. Lee, Charleston, was elected president of the Southeast Missouri Medical Association at the fiftieth annual meeting, October 12-13, Cape Girardeau; Dr. John J. Chandler, Lutesville, vice president, and Dr. Elam J. Nienstedt, Blodgett, corresponding secretary; the next annual meeting will be at Poplar Bluff, October, 1927.

Samuel E. Ball's License Revoked.—Following a hearing, November 23-24, the state board of health revoked the license of Dr. Samuel E. Ball, proprietor of a "health school" and sanatorium at Excelsior Springs. Dr. Ball was charged, it is reported, with unprofessional conduct in soliciting patients at the railroad station, with paying taxicab drivers for sending patients to his sanatorium, and in paying others in nearby cities part of the money spent at the sanatorium by patients they sent there. Dr. Ball is a graduate of the St. Louis College of Physicians and Surgeons.

NEW JERSEY

Society News.—Dr. Abraham L. Wolbarst, New York, addressed the Orange Mountain Medical Society, East Orange, November 19, on "Hematuria with Special Reference to Diagnosis."——Dr. Alfred Stengel, Philadelphia, held a medical clinic before the Atlantic County Medical Society, Atlantic City Hospital, December 10.

Chiropractor Treats Rheumatism—Sued—Patient Dies.—The trial of Otto Schultz, chiropractor, Union City, following the death of Joseph Toczko, a patient, began at Jersey City, November 23. The boy is said to have been treated by Schultz for five months for "inflammatory rheumatism." The father, who alleged that the chiropractor's manipulation was contributory, is attempting to recover $10,000 for the death of his son.

Automobile Licenses Revoked.—The state motor vehicle commissioner, William L. Dill, revoked the licenses of about ninety automobile drivers, or otherwise penalized them, in the two week period ending December 4. Most of the penalties were due to driving while intoxicated; other reasons were reckless driving, lending license, transporting liquor, giving worthless check in paying fine, speeding, using another's license, and driving car without consent of owner.

Dr. Wilson Honored.—Concluding forty-three years of service at the Elizabeth General Hospital, Elizabeth, the last part as president of the staff, Dr. Norton L. Wilson retired from active service at the hospital, November 20, and that evening was guest of honor at a surprise testimonial dinner at the Waldorf-Astoria, New York. A beautiful watch engraved in part with an inscription from Cicero's essay on friendship—Verum amicum qui intuetur, exemplar aliquod intuetur sui—was presented by Dr. Arthur Stern in behalf of physicians with whom the guest of honor had long been associated. Dr. James R. Green presided at the dinner; among those who spoke were Drs. Wells P. Eagleton, Newark; Alvin R. Eaton, Jr., Stephen T. Quinn, Otto Wagner and George T. Banker. Dr. Wilson's other activities include years of service to organized medicine; he is a past president of his county and state medical societies and is still active in their work; he was also on the school board and was the first police commissioner of Elizabeth.

NEW YORK

Increase in Death Rate.—The U. S. Department of Commerce announces that the death rate in New York for 1925 was 12.77 per thousand of population, as compared with 12.71 in 1924. The increase was accounted for largely by the death rates from heart disease, nephritis and influenza. There were decreases in the death rates from measles and whooping cough.

Dipped Milk Prohibited.—The department of health of Syracuse has notified the lunch rooms, restaurants, drug stores and ice cream places of the city that after Jan. 1, 1927, the sale of milk to ultimate consumers drawn from bulk containers would be prohibited. The regulation was promulgated only after it had been found that 50 per cent of the dipped milk sold in restaurants did not come up to the standard specified by the sanitary code. After that date, all milk in public eating places must be sold in original containers.

Jamestown Denied Appeal—$15,000 Damages.—The court of appeals handed down a decision, October 5, according to *Health News*, refusing the city of Jamestown permission to appeal from the decisions of the lower courts, which have given damages amounting now to nearly $15,000 to members of the Forbes family. About three years ago, a typhoid epidemic in Jamestown was held by the city to have been caused by a carrier in the Forbes family. The Forbes' contention on which the suit was based was that if the milk was contaminated it resulted from the cows wading in a creek which is polluted by city sewage. Jamestown is a city of about 40,000 population, and now is about to ask for bids for the construction of a sewage disposal works.

New York City

Appointments at Mount Sinai Hospital.—Dr. Louis Gross has been appointed acting director of laboratories at Mount Sinai Hospital; Dr. Gregory Shwartzman, bacteriologist; Michael Heidelberger, chemist, and Dr. Paul Klemperer, pathologist. The hospital announces that alterations are being made to accommodate a complete full-time staff in the laboratories.

City Radium for Cancer Patients.—Plans have been completed, it is reported, whereby the city of New York will erect a radium emanation plant on Welfare Island in connection with the city's cancer institute; $140,000 worth (2 Gm.) of radium will be purchased for the treatment of advanced cases of cancer referred from the city's cancer clinic, 124 East Fifty-Ninth Street. The plant will be in operation early next year.

Hospital News.—The United Hospital Fund of New York aims this year to collect in contributions $1,000,000 for charitable work among the fifty-six nonmunicipal hospitals which hold memberships in the fund; this is the forty-eighth annual collection.——The Knickerbocker Hospital completed its moving into the new building at Convent Avenue at One Hundred and Thirtieth Street, November 22; this is said to be the third time the hospital has moved since 1913.——The staff of the Bronx General Hospital, which will open in the fall of 1927, has been announced by the commissioner of public welfare.

Personal.—Dr. Joseph J. Berkowitz has been appointed instructor in the department of gynecology at the New York Post-Graduate Medical School and Hospital.——Dr. Winfield S. Pugh has been elected president of the Kings County Hospital Alumni Association, which will hold its annual reunion

at the Hotel St. George, Brooklyn, Jan. 22, 1927.——Dr. Max Krueger has retired after practicing about twenty-five years on Staten Island and has gone to Stuttgart, Germany, to reside.——Dr. A. Mackenzie Forbes, Montreal, Canada, has been reelected president of the Alumni Association of the Hospital for the Ruptured and Crippled.

Physicians Indicted on Liquor Charges.—Ten physicians, eleven druggists and others were indicted by a federal grand jury, November 29, it is reported, on charges of conspiring to violate the Volstead Act. One of the charges was said to be that the defendants maintained a "physicians and druggists service bureau" to sell illegally executed prescriptions blanks for whisky. Some whose names appear in the indictment escaped indictment by appearing as witnesses for the government. Physicians reported indicted were:

Amedee J. Debon	Emanuel Bailyn
Samuel Ash, Newark, N. J.	William L. Weintraub
Stella Shaffer Epstein	Morris A. Jacobs
Frank J. Accarino	J. Edgar Getman
Gustave Brown	Wilfred P. Byrne

Society News.—Dr. Alfred F. Hess addressed the New York Electrical Society, November 24, on "Newer Knowledge of the Action of Ultraviolet Rays."——Dr. Samuel Lubash, among others, addressed the Harlem Medical Association, December 1, on "Infarct of Testicle."——Dr. Henry S. Patterson has been elected president of the Medical Society of the County of New York for the ensuing year; Drs. John Douglas and Dewitt Stetten, vice presidents, and Dr. Daniel S. Dougherty, secretary.——Dr. Samuel W. Lambert has been elected president of the New York Academy of Medicine for a period of two years; Dr. William H. Park, vice president for three years; Dr. Seth M. Milliken, treasurer for three years, and Drs. Samuel A. Brown and Charles L. Dana, trustees for five years.——Dr. Henry Dawson Furniss of the New York Post-Graduate Medical School and Hospital addressed the Academy of Medicine of Buffalo, November 18, on "Frequency of Urination in Women."

OHIO

Large Fund for Community Chest.—The eighth annual community chest campaign at Cleveland for funds for charitable purposes, which has just closed, provided, it is reported, the greatest sum ever collected in a similar campaign, $4,445,506 having been contributed.

Water Works for Crooksville.—At the November election, the citizens of Crooksville voted a bond issue of $96,000 with which to provide a public water supply. For several years, Crooksville, according to the state health department, has had the reputation of being the largest municipality in the state without a public water supply.

New Institute of Pathology for Western Reserve.—Seven hundred and fifty thousand dollars of the gift to Western Reserve University, Cleveland, from the General Education Board, announced Thanksgiving Day, will be used to build an institute of pathology for the medical school and its affiliated hospitals. The new building to be erected shortly, just north of the Babies and Children's Hospital on the health group tract of land, will be four stories high, 157 by 55 feet, and will resemble in architecture and material other buildings in the group. Dr. Howard T. Karsner, for twelve years professor of pathology, will be in charge of the institute. All pathologic work for the group of hospitals will be centered here; medical students will be given their courses in pathology here; there will be quarters for clinicians who desire to conduct investigations, ample equipment for research by members of the staff, a museum, and an amphitheater seating 135 persons.

Opening Meeting in New Home.—The first meeting of the Academy of Medicine of Cleveland in its new home in the Cleveland Medical Library Association Building, 2009 Adelbert Road, November 19, broke all records for attendance. Two state society officials, Dr. Leslie L. Bigelow, Columbus, president-elect, and Dr. Herbert M. Platter, Columbus, treasurer, addressed the meeting; Dr. Lewis Gregory Cole, New York, gave an address on "Gastric Ulcer," illustrated with five reels of motion pictures. The new quarters comprise a suite of executive offices, a committee room, the use of the main auditorium and smaller halls of the library building and the use of a supper room. The academy is starting a plan to bring its members in closer contact with the social service work of Cleveland hospitals. It is proposed that the superintendent of each hospital be asked to appoint an advisory committee of three from the medical staff of his hospital, to sit with the superintendent and social workers of the institution in conference on questions affecting the eligibility of patients for admission to dispensaries, and to discuss the principles involved in social service work. There will be an interhospital committee composed of one of each individual hospital committee, and this will be a subgroup of the academy hospital and dispensaries committee. The academy thus hopes to establish an understanding on the part of social workers and physicians, and to provide official means for discussing individual cases in which admission to a dispensary is questioned by a physician.

PENNSYLVANIA

Hospital News.—The new Children's Hospital, Pittsburgh, was opened November 1. There are private rooms which are open to any reputable physician.——Mr. David Jameson, president, Citizen's National Bank, New Castle, has given $600,000 for the immediate erection of a 150 bed hospital to be known as "The Jameson Memorial Hospital," to replace the Shenango Valley Hospital, New Castle, Pa.

Thirteen Fraternal Orders Lose Insurance License.—According to the New York *Times*, the Pennsylvania licenses of thirteen fraternal insurance organizations were revoked by the state insurance commissioner, December 4. The reasons assigned for the revocations were, among others, high expenditures for salaries, excessive cost of management, high percentage of lapses, and failure to attend hearings.

Prize for Case Report.—The Allegheny County Medical Society, Pittsburgh, announces its second annual case report contest for interns of approved hospitals in Allegheny County. The prize will be $25, with honorable mention to such as have unusual merit. The report must be that of a case which has been under the care of the intern submitting the report, and should not exceed 800 words. Manuscripts should be mailed to the secretary of the society, Jenkins Arcade, Pittsburgh, prior to April 1, 1927, from whom further information can be obtained.

Society News.—The Tioga County Medical Society was host to physicians from four neighboring counties at the Penn-Wells Hotel, Mansfield, October 29; among others, speakers were Dr. Walter S. Brenholtz, councilor of the district; Dr. Harry J. Donaldson, Williamsport, and Dr. Lloyd G. Cole, Blossburg.——Dr. A. R. McCormick addressed the Pittsburgh Academy of Medicine, November 23, on "The Diameter of Red Blood Cells in Health and in Anemia."——The Medical Club of Harrisburg celebrated its fifteenth anniversary at the banquet, November 12, at the Beach Front Hotel; Dr. Jesse O. Arnold, clinical professor of obstetrics, Temple University School of Medicine, Philadelphia, spoke on "The Challenge to Higher Ideals in Practical Obstetrics."

Philadelphia

Personal.—A tablet in honor of Dr. Edward P. Davis has been unveiled by the Nurses Alumnae Association of the Philadelphia General Hospital Training School for Nurses. Dr. Davis has been chairman of the committee on nurses for more than thirty-eight years, and for twenty-five years was visiting obstetrician to the hospital.

Hospital Loses Gift.—The Presbyterian Hospital and the Home for Incurables are deprived of $5,000 legacies left them by the late Mrs. Mary A. Ellis because her death, Dec. 9, 1925, occurred eighteen days from the time she provided for the bequests in a codicil to her will. The law declares void legacies to charities willed within a period of thirty days of the date of death of the donor.

Proposed Expansion of Medical School.—The president of Temple University announces that the board of trustees has decided to launch a comprehensive campaign of development. The $20,000,000 fund will be raised by popular subscription and will be administered by the Russell H. Conwell Foundation. One of the beneficiaries of the expansion will be the medical school, which has already purchased a new site at Broad and Ontario streets for the erection of a $1,500,000 medical college building.

Further Narcotic Restrictions Opposed.—The Philadelphia County Medical Society adopted a resolution, November 17, to the effect that the Senate Bill number 4085 and House Bill number 11612, which aimed to impose further restrictions on physicians with regard to carrying out the Harrison Narcotic Act, should be defeated. The society considered that the proposed bills do not allow any physician to defend himself if charge is made against him personally in the use of narcotics, or in his prescribing narcotic drugs for other persons, and they require burdensome keeping of records without any additional safeguard.

Society News.—Dr. Lloyd B. Greene gave a "review of the urologic literature of the last year" before the Philadelphia Urological Society, November 22.——The Philadelphia Neurological Society was addressed, among others, November 26, by Dr. George Wilson on "Treatment of Neurosyphilis by Inoculation with Malaria," and by Dr. Walter S. Freeman, "Histopathology of Paresis Treated by Malaria."——The Philadelphia County Medical Society held a Thanksgiving entertainment and dance, November 27, in the auditorium.——Dr. John B. Carnett addressed the Northern Medical Association of Philadelphia, November 15, on "Differential Diagnosis of Affections Causing Abdominal Pain and Tenderness."——Dr. Walton Martin, professor of clinical surgery, Columbia University College of Physicians and Surgeons, will give the Mütter Lecture, December 10, at the College of Physicians, Twenty-Sixth Street near Chestnut, on "Hepatitis and Jaundice."——Dr. Benjamin P. Watson, professor of gynecology and obstetrics, Columbia University College of Physicians and Surgeons, New York, formerly of the University of Edinburgh, addressed the Obstetrical Society of Philadelphia, December 2, on "Responsibility of the Obstetrical Teacher in Relation to Maternal Mortality and Morbidity."——Dr. Henry K. Pancoast addressed the College of Physicians of Philadelphia, December 1, on "Roentgen-Ray Diagnosis of Pneumoconiosis," and Dr. Eugene P. Pendergrass on "Roentgen-Ray Diagnosis of Pedunculated Tumors and Gastric Mucuous Membrane Prolapsing Through the Duodenum."——Dr. John A. Kolmer gave a University Extension Medical Post-Graduate Lecture at the Graduate School of Medicine, University of Pennsylvania, November 29, on "Nature, Mechanism and Specificity of the Wassermann and Precipitation Reactions in Syphilis"; Dr. Bernard P. Widmann, lectured on "Fractures."

SOUTH DAKOTA

License Revoked.—Following a hearing at Sioux Falls, September 13, the state board of health revoked the license to practice medicine in South Dakota of Dr. Thomas G. Thompson, Sioux Falls. The charge is said to have been habitual intemperance.

WASHINGTON

Sanipractic University Loses Appeal.—The state supreme court handed down a decision, October 25, confirming the decision of the King County Superior Court in dissolving the American University of Sanipractice, Seattle. The court also sustained the revocations of all licenses issued on the basis of a diploma.

Society News.—Maud Slye of the University of Chicago will address the King County Medical Society under the auspices of the Seattle Academy of Surgery, December 13, on "Studies in the Nature and Inheritability of Cancer"; Dr. Charles R. Fishel, Tacoma, among others, addressed the society, December 6, on "Indications for Selecting X-Ray or Radium in Radium Therapy"; Dr. Leonard H. Jacobsen, November 1, on "Early Syphilis—Diagnosis, Prognosis and Treatment"; Drs. Jay I. Durand, on "Enlargement of the Thymus Gland" and Arthur E. Wade, "Blood Chemistry in Pylorospasm and Pyloric Stenosis," November 22.

GENERAL

No Payment for Donors.—The comptroller general has ruled that employees of the government whose salaries are fixed by law can not be paid a fee for giving their blood for transfusion purposes, and that such payment is prohibited by provisions in the revised statutes and previous decisions of the comptroller general. It was held that giving blood for transfusion involves the rendering of personal service rather than the selling of a commodity.

National Board of Medical Examiners.—A sufficient number of applications have been received by the board to warrant holding an examination in Part III in New York, the latter part of December or the first of January, and it is expected that a sufficient number will be received to warrant holding the examination in Chicago at about that time. Should a sufficient number of candidates apply, the examinations will also be held in St. Louis and Minneapolis. Persons interested should apply to the National Board of Medical Examiners, 1600 Walnut Street, Philadelphia. Examination in Parts I and II will be held June 15-17, at least in all cities where class A medical schools are located. Applications for this examination should be made not later than May 15.

National Committee for Mental Hygiene.—Dr. Charles P. Emerson, Indianapolis, was reelected president of the National Committee for Mental Hygiene at the seventeenth annual meeting, New York, November 11. Bishop William Lawrence of Massachusetts was elected vice president to succeed the late Charles W. Eliot, president emeritus of Harvard University; James R. Angell, president of Yale University, and Dr. Bernard Sachs, New York, were reelected vice presidents. The medical director, Dr. Frankwood E. Williams, reported that the Commonwealth Fund had decided to appropriate $490,000 next year for various mental hygiene projects, an appropriation likely to be renewed and increased in succeeding years. The Rockefeller Foundation has given the committee $40,000 for fellowships for the training of psychiatrists, psychologists and psychiatric social workers in community mental hygiene technic and methods.

Applications for Fellowships.—The National Research Council, Twenty-First and B streets, Washington, D. C., announces that applications for fellowships in medicine should be filed before March 1, 1927, in order to receive consideration at the next meeting of the medical fellowship board to be held the latter part of April. They should be addressed to the secretary of the Medical Fellowship Board at the address given above. The council reports the appointment of former fellows of the council to the positions indicated:

Dr. Charles S. Woodall, Walter E. Fernald State School, Waverly, Mass.
Dr. Bernhard S. Steinberg, director of laboratories, Toledo Hospital, Toledo, Ohio.
Dr. Jay McLean, assistant attending surgeon, Polyclinic Hospital, New York.
Dr. Louis Leiter, assistant professor of medicine, University of Chicago.
William H. Chambers, Ph.D., instructor in physiology, Yale University, New Haven, Conn.
Clarence A. Mills, Ph.D., associate professor of medicine, Peking Union Medical College, China.

Annual Report of St. Elizabeth's Hospital.—The total number of patients under treatment at St. Elizabeth's hospital, Washington, D. C., the government hospital for the insane, during the year ending June 30, was 5,114, an increase of eighty-seven over the previous year. The daily population averaged 4,403, an increase over the previous year of 140; there were 303 deaths, an increase of sixty-five. Dr. William A. White, superintendent, notes, in the annual report, an urgent need of a new medical and surgical building. The hospital is crowded, having at the time of the report about 500 more patients than bed capacity; there are 500 patients in temporary buildings which are more or less of a fire hazard and must be replaced; in considering the future growth of the hospital, 500 additional beds should be considered, thus making it wise to provide buildings containing 1,500 additional beds to meet the hospital's present and immediate needs. Dr. White reports that the evaluation of malarial treatment of general paralysis is progressing well at St. Elizabeth's, and that the study of the brain in patients dying of intercurrent diseases reveals a good anatomic foundation for the clinical observation of improvement.

Women's Clubs Urge Extension of Sheppard-Towner Act.—National and state women's civic and political organizations are engaged in an active campaign to have Congress extend the life of the Sheppard-Towner maternity and infancy law. A meeting has been held in Washington by the Women's Joint Congressional Committee, composed of delegates from twenty-two women's organizations throughout the country representing a membership of several hundred thousand women. This committee has placed the Sheppard-Towner legislation at the head of its legislative program. Members of congress are receiving resolutions and petitions from women's clubs throughout the country urging that the extension of the Sheppard-Towner law be acted on immediately by Congress. It is apparent that the proponents of this measure are well organized and are bringing powerful political pressure to bear in favor of the bill. The Senate Committee on Education and Labor took a firm position against indefinitely continuing the operation of this legislation. The committee recommended that the annual appropriation of $1,240,000 of federal funds to the states terminate, June 30, 1928. The committee pointed out that it was never the intention that "such financial aid should become a permanent function of the federal government or that such federal appropriations should be continued indefinitely from year to year." The committee showed that: such legislation is paternalistic; this work as conducted in the several states is strictly a local function; the states should be encouraged to stand on their own feet, rather than to lean on the central government, thus tending to impair the prestige and sovereignty of local self-government. Notwithstanding the

firm position taken by the Senate Committee on Education and Labor, it is apparent that the question of a permanent federal appropriation policy on this question will be thrown open in the Senate, and that the organized women's clubs and federations will bring powerful political influence to bear to defeat the plan of the Senate committee to terminate these appropriations within the one year period.

New County Society Secretaries.—The following physicians have recently been elected secretary of the county society indicated:

Dr. Malcolm P. Andrews, Manitowoc, Wis., Manitowoc County Medical Society.
Dr. Frank E. Ayers, Celina, Ohio, Mercer County Medical Society.
Dr. Silas J. Banker, Fort Edward, N. Y., Washington County Medical Society.
Dr. Frank A. Beardsley, Frankfort, Ind., Clinton County Medical Society.
Dr. Upton B. Bowden, Pelham, Tenn., Coffee County Medical Society.
Dr. Isaac W. Brewer, Bath, N. Y., Steuben County Medical Society.
Dr. Samuel J. Brown, Panora, Iowa, Dallas-Guthrie County Medical Society.
Dr. Samuel W. Close, Gouverneur, N. Y., St. Lawrence County Medical Society.
Dr. Glen W. Doolen, Davenport, Iowa, Scott County Medical Society.
Dr. Orion O. Feaster, St. Petersburg, Fla., Pinellas County Medical Society.
Dr. Forest O. Garver, Bellefontaine, Ohio, Logan County Medical Society.
Dr. Louis H. Gaus, Ticonderoga, N. Y., Essex County Medical Society.
Dr. William H. Geistweit, Jr., San Diego, Calif., San Diego County Medical Society.
Dr. Edward B. Grogan, Galesburg, Ill., Knox County Medical Society.
Dr. William T. Johnson, Jr., Gothenburg, Neb., Dawson County Medical Society.
Dr. Clarence R. Kay, Peapack, N. J., Somerset County Medical Society.
Dr. Josiah T. Kretsinger, Leaf River, Ill., Ogle County Medical Society.
Dr. Justin Leahy, Park Falls, Wis., Price and Taylor County Medical Society.
Dr. Richard M. Little, Martin, Tenn., Tri-County Medical Society (Benton, Carroll, Weakley).
Dr. Brice F. Metcalfe, Greenville, Ohio, Darke County Medical Society.
Dr. Elizabeth R. Miner, Macomb, Ill., McDonough County Medical Society.
Dr. Joseph H. Mull, Rome, Ga., Floyd County Medical Society
Dr. Leonard A. O'Donnell, Chapman, Kan., Dickinson County Medical Society.
Dr. Luther C. Payne, Liberty, N. Y., Sullivan County Medical Society.
Dr. Eley E. Perisho, Streator, Ill., La Salle County Medical Society.
Dr. John M. Phillips, Benton, Ark., Saline County Medical Society.
Dr. Ralph B. Post, Ballston Spa, N. Y., Saratoga County Medical Society.
Dr. John W. Prentice, Deer Park, Wis., Pierce-St. Croix County Medical Society.
Dr. Julius C. Schulz, Wellsburg, W. Va., Brooke County Medical Society.
Dr. Herbert C. Scribner, Bangor, Me., Penobscot County Medical Society.
Dr. Clifford E. Smith, DeKalb, Ill., DeKalb County Medical Society.
Dr. Varnum C. Southworth, Monroe, Mich., Monroe County Medical Society.
Dr. Frederick H. Voss, Kingston, N. Y., Ulster County Medical Society.
Dr. Ford Ware, Americus, Ga., Sumter County Medical Society.

CANADA

Hospital News.—A bronze tablet was recently unveiled in the western division of the Montreal General Hospital in honor of the late Dr. John Anderson Springle, formerly chief of the surgical department.

Birth Rate Declines in English-Speaking Provinces.—Statistics for a twelve month period show, it is reported, that in every part of Canada more children are born per family to parents of foreign extraction than to Canadian or British parents; only 33.1 per cent of the parents of the new babies in Alberta were Canadian born, while in Prince Edward Island 95.6 per cent of them had Canadian parents. New Brunswick had the highest birth rate and British Columbia the lowest. The birth rate in the English speaking provinces is said to be declining. The infant mortality rate during this period was 78.5 per thousand of living births, which is a decrease from that of the previous year.

Deaths in Other Countries

Francis Mitchell Caird, formerly regius professor of clinical surgery, University of Edinburgh, president of the Royal College of Surgeons of Edinburgh, November 1; aged 73. ——**Karl Eberth** of the University of Halle, Germany, discoverer of *Bacillus typhosus,* aged 91.

CORRECTION

A Health Education Procedure.—In the review of this book published in THE JOURNAL, November 27, the statement was made that the author had neglected to mention *Hygeia.* A letter has been received in which it was pointed out that the periodical is mentioned among sources of health material on page 398.

Government Services

U. S. Public Health Service

Surgeon Harry E. Trimble has been directed to assume charge of all quarantine and immigration activities at the port of Philadelphia.——Surgeon Richard H. Creel has been assigned to duty as medical officer in charge of U. S. Marine Hospital No. 19, San Francisco.——Surgeon Roy P. Sandidge has been assigned to Washington, D. C., for duty.——Assistant Surgeon William H. Gordon has been ordered to duty under terms of commission and assigned to the U. S. Marine Hospital No. 13, Mobile, Ala.——Surg. George W. McCoy was directed to proceed to New York, November 10, and return to Washington, D. C., in connection with studies of pneumonia and influenza.——Surg. P. D. Mossman was directed to proceed from Rolla, Mo., to New York, December 1, and return in connection with the prevention of the spread of trachoma.——Dr. John McMullen has been promoted to the grade of senior surgeon.——Surg. Milton H. Foster has been assigned as medical director of district number 3, with headquarters at Chicago.——Surg. Howard F. Smith has been assigned to duty at the Hygienic Laboratory, Washington, D. C.——Pathologist William C. White has been authorized to proceed to England, Denmark, France and other European countries and return in connection with studies of tuberculosis (no expense to government involved).

Veterans' Bureau Personals

Dr. Douglas Brown was appointed as specialist in internal medicine at Hospital No. 88, Memphis, Tenn., August 21; Dr. Birnie R. Caldwell, transferred to Hospital No. 41, West Haven, Conn., August 1; Dr. Arthur P. Chadbourne, transferred to Hospital No. 53, Dwight, Ill., August 16; Dr. Edgar O. Crossman, transferred to Hospital No. 44, West Roxbury, Mass., August 1; Dr. Dorrell G. Dickerson, transferred to Seattle regional office, September 1. Dr. Isaac A. Dix, transferred to Seattle regional office, September 16; Dr. Hiram B. Henry, resigned at Hospital No. 57, Knoxville, Iowa, August 31; Dr. Robert Hodes, resigned at Hospital No. 42, Perry Point, Md., September 15; Dr. Herman S. Judd, resigned at Hospital No. 24, Palo Alto, Calif., August 15; Dr. James G. Kidd, resigned at Hospital No. 101, St. Cloud, Minn., September 26; Dr. Frank E. Leslie, transferred to Hospital No. 49, Philadelphia, Pa., September 1; Dr. Nicholas A. Mandelos, transferred to Hospital No. 55, Fort Bayard, N. M., August 16; Dr. Earl B. Miller resigned at Hospital No. 80, Fort Lyon, Colo., August 31; Dr. Michael D. Moran, resigned at Hospital No. 98, Castle Point, N. Y., August 31; Dr. Jeff D. Nelson, resigned at Hospital No. 91, Tuskegee, Ala., August 10; Dr. William F. Roberts, transferred to Hospital No. 68, Minneapolis, Minn., August 16. The following changes in the regional offices were also announced: Dr. Irving E. Charlesworth, resigned at Regional Office, San Francisco, September 30; Dr. William J. L. Davis, resigned as medical examiner, Scranton, Pa., September 30; Dr. Robert J. Judkins, resigned as medical examiner at Cincinnati, August 24; Dr. Roy C. Meals, transferred to Newark, N. J., October 16; Dr. Floyd B. Richetts, resigned as medical examiner at Minneapolis, November 10; Dr. William C. Schroeder, transferred to Albany, N. Y., November 1; Dr. Francis M. Shockley, transferred to Central Board of Appeals, Central Office, October 16; Dr. Charles R. Bird, appointed medical examiner at Indianapolis; Dr. Maxwell C. Brandstein, resigned as tuberculosis examiner, Newark, N. J.; Dr. Burnett A. Filmer, transferred to Denver, Colo., as medical examiner; Dr. Ross H. Miner, transferred to Pittsburgh, Pa., as general examiner; Dr. Robert H. Rea, resigned at Seattle, Wash.; Dr. Joseph W. Woodward, transferred to Hartford, Conn., as medical examiner; Dr. Robert J. Flynn, appointed medical examiner, Scranton, Pa.; Dr. M. B. Holmes, appointed medical examiner, Dallas, Texas.

New Navy Captains

The following medical officers of the navy have been approved by the President for promotion to captain: Ralph W. Plummer, Samuel S. Rodman, Robert G. Heiner, John B. Mears, George S. Hathaway, Frank E. Sellers, Edward H. H. Old, Edward C. White, Thurlow W. Reed, Edgar L. Woods, John B. Kaufman, James P. Haynes, Thomas W. Raison and James M. Minter.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 20, 1926.

British Surgical Instruments

Whatever this country may be wanting in, it has always been distinguished by producing craftsmen second to none. At the annual dinner of the Surgical Instrument Manufacturers' Association, Mr. P. C. Maw said that British surgical instruments were the product of skilled workmen who took great pride in turning out the best, while some foreign surgical instruments were turned out in hundreds by machines. Naturally, there was a difference in the price, and that was a difficulty they had to face. During the past year, the association had been doing its best to get the products of its members brought under the Safeguarding of Industries Act, but they had been informed that their industry was not important enough to warrant such action. Mr. Irwin Moore, the surgeon, said that all surgeons owed a deep debt of gratitude to the British surgical instrument makers, without whose assistance surgeons would have many failures. No surgical instruments in the world could compete or compare in quality or efficiency with those produced by the British makers.

The Origin of Mammals

Dr. Roy Chapman Andrews, the leader of the expedition sent by the American Natural History Museum to the central Asian plateau, which found the first dinosaur eggs, has arrived in London on a short visit to tell to the Royal Geographical Society and the Central Asian Society the story, as far as it goes, of the discoveries made by the expedition. There still remain three seasons in which the work of investigation on the plateau, and particularly in the Gobi desert, will be continued, but the excavations have already yielded valuable results. The expedition went out in 1922 principally to test a theory, held by Prof. Henry F. Osborne since 1900, that the central Asian plateau was the distribution center from which many of the branches of animal life radiated to the rest of the world. Dr. Andrews decided to look first for fossil remains of the animals; then to examine the geologic changes; further to note climatic changes, and finally to collect surviving zoological specimens. Remarkable finds have been made in the fossil section. In one deposit, seventy-five skulls and fourteen skeletons of dinosaurs were found, and some of the skeletons were splendidly preserved. The stomach of one was seen to contain pebbles evidently swallowed, as the chicken swallows gravel, to aid digestion. The results, up to the present, have exceeded expectations and have gone a long way toward substantiating Professor Osborne's theory. Central Asia appears to have been the point of radiation for the animals of the northern half of the world. The expedition found evidences there of the ancestral forms of many groups of reptiles and early mammals of Europe and America. It found also that human beings inhabited this plateau for a long period and that they were widespread; implements were found going back a hundred thousand years to the time of Neanderthal man; there was a great camp of "dune dwellers," dating back about 20,000 years. About these not much is known because bones were not found. There were fireplaces and they must have lived on game, so that evidently conditions were not favorable for the preservation of bones. The investigations had shown that the climate had changed considerably, and that in the last 200,000 years it had been drying rapidly. The desert condition of this plateau was comparatively recent and before it, according to the evidence of the fossil trees and plants, this was a region of rolling meadowland, with trees and forests and an exhilarating climate. The explorers believed, too, that they had evidence here of the change from reptiles into the first warm-blooded mammals.

The Lowest Birth Rate on Record

The third quarter of 1926, ending September 30, had the lowest birth rate recorded in any third quarter except during the years 1917 and 1918. The total number of births registered was 174,902, which is 6,993 below the number recorded in the corresponding quarter of 1925. Of these births, 89,140 were males and 85,762 females, giving a proportion of 1,039 males to 1,000 females; the average proportion in the ten preceding third quarters was 1,050. The general death rate was 0.4 below that recorded for the third quarter of last year. The total number of deaths was 90,722, comprising 46,940 males and 43,782 females. For the second quarter of 1926, the number of persons married in England and Wales was 156,598, which is 7,244 less than in the corresponding quarter of 1925.

Cancer Research

Considerable attention is paid to cancer research in a report issued by the League of Nations on the work of its health committee. The cancer commission of the committee has for some time been undertaking an inquiry "as to the extent and causes of the marked differences in certain forms of cancer mortality in different countries." This has been done "in the hope that it would throw some light on causes of relative immunity or susceptibility." A report has been made to the health committee and adopted by the latter dealing with the following points: 1. Comparative studies on the frequency of mortality of cancer of the breast and the uterus in different countries and the preventive measures adopted; the fact that the differences of mortality in different countries are real and not due to differences in diagnosis, registration, etc., has been definitely established. 2. Investigations as to the possible relation between cancer mortality and race in certain European countries; the result of the investigations hitherto has been negative. 3. The value to be attached to statistics concerning cancer mortality and the interpretation of such statistics. 4. The efficacy of early operation is brought out in a striking manner by the data collected, and should, in the opinion of the commission, be more generally realized.

"Vitaglass" at the Zoo

The New Health Society received about fifty representatives of the press and others interested in health questions, at the Zoological Gardens, to meet Mr. F. E. Lamplough, the inventor of "vitaglass," and to inspect the installations in the gardens. Dr. S. H. Belfrage explained that the New Health Society, whose object was education in all matters affecting health, attached a high value to Mr. Lamplough's invention of "vitaglass" and to the successful experiments in its use made at the zoo. Ultraviolet rays had a stimulating effect on general growth, power of resistance to disease, and on the richness of the blood. They were closely associated in their qualities with the chemical substances now known as vitamins. About 1 per cent of the energy radiated by the sun came in the form of these rays, but, in passing through the atmosphere a considerable proportion of them were absorbed, so that at sea level the supply was scantier than on mountain tops. The less pure atmosphere of cities absorbed a still further proportion, so that there was the more need to make use of what were left. Ordinary window glass transmitted heat and visible light, but was quite untransparent to the health-giving ultraviolet rays. Mr. Lamplough, after prolonged experiment, had invented a form of glass which was transparent to ultraviolet rays. He hoped that before long it would be used extensively, not only in institutions, but in private houses. The Zoological Society

had built a special house to test it, and as a result of its success there had installed it in the lion house and in parts of the existing reptile house. They are also placing it in the new reptile house and in the monkey house. It has been found that ultraviolet rays have a markedly beneficial influence on the vitality and spirits of reptiles, monkeys, and the large carnivores. In foggy weather, almost no ultraviolet rays penetrate the atmosphere, and to provide for such occasions, too frequent in London in the winter, the zoo has installed powerful electric light of different kinds, in bulbs transparent to ultraviolet rays, so as to give artificial sunlight. Delicate monkeys that formerly moped all winter were seen basking in the light rays and dashing in and out of their cages, which communicated with open-air dens, in the best of health and spirits. The visitors also saw delicate reptiles that formerly never ate and seldom survived the winter eating vegetable food with relish.

Fatal Street Accidents

An increase in the number of fatal street accidents in London is shown in the returns for the quarter comprising July, August and September. The figures, compared with the quarter before, show an increase of fifteen in the fatal accidents and a decrease of 3,990 in other accidents, the numbers being 269 fatal and 26,727 nonfatal. The returns for the preceding quarter showed an increase of sixty-seven accidents over the first quarter of the year. The details are as follows:

Vehicle	Persons Killed	Nonfatal Accidents
Omnibuses	29	1,801
Tramcars	4	1,222
Cabs	3	1,067
Private motor cars	76	8,355
Motor cycles	42	3,510
Trade and commercial	87	5,231
Traction engines	1	24
Horse drawn—		
Omnibuses	—	1
Cabs	—	2
Broughams	—	32
Trade and commercial	17	1,800
Pedal cycles	10	3,645
Horses ridden or led	—	37
Totals	269	26,727

The Insurance Medical Service

In his report for 1925 to the ministry of health, Sir George Newman, principal medical officer to the ministry, states that in a population of 38,890,000 in England and Wales, 13,695,000 persons are entitled to medical benefit under the national health insurance act. The number of insurance physicians is 13,827, and the average number of persons on a physician's list is 957. The total cost of medical benefit in the year 1925 was $41,401,500, of which approximately $32,055,690 was devoted to the remuneration of physicians.

Smallpox in County Durham

The Brandon (Durham) urban council held a special meeting to consider the outbreak of smallpox in its area and the question of hospital accommodation. Complaint was made that, when patients were removed from the district, neighbors flocked to the van to say good-bye. Dr. Smith, health officer, said that the disease was imported by a person from Middlesbrough, and since October 13 there had been cases practically every day, the total numbering 180. The local hospitals were full, and Middlesbrough had offered to take from thirty to forty patients each week. There were three cases that day, and owing to the absence of hospital accommodation, the patients were not removed from their homes. The council agreed to inform the ministry of health that the hospital accommodation was full to overflowing and that the council was detaining all patients at home under efficient nursing services. Posters are to be issued urging persons in infected houses to keep within doors and to adopt every possible measure to prevent the spread of the disease.

PARIS

(From Our Regular Correspondent)

Nov. 10, 1926.

Diathermic Treatment of Inflammatory Stricture of the Rectum

Dr. Bensaude, chief physician of the St. Antoine Hospital in Paris, who has made many researches on the rectum and who is the inventor of a widely used rectoscope, has published an article on diathermic treatment of inflammatory stricture of the rectum. His results are better than those obtained by the ordinary methods. The passing of large sounds has to be continued indefinitely. Surgical treatment cannot be relied on either. During the two years that Dr. Bensaude has employed his procedure at the St. Antoine Hospital, the results were as follows: Twenty-seven patients were affected with inflammatory stricture of the rectum. Five presented vegetative rectitis or anitis with infiltration of the walls. Of the first group of twenty-seven patients, ten have at present no trace of stricture. One recovered thirteen months ago, another nine months ago; three others have been well for six months, the others for only two or three months. The other seventeen have been under treatment for shorter periods. They are improved but not completely cured. Of the five patients presenting anorectitis with infiltration of the walls, two were cured completely of the induration. In the three other patients who are still under treatment, the induration has diminished considerably.

Transmission of Tuberculosis from Mother to Child

Professor Calmette, assistant director of the Pasteur Institute, has presented before the Academy of Sciences the results of his observations, made in collaboration with M. Vallis and M. Lacomme and with the aid of Professor Couvelaire, on the intra-uterine transmission of tuberculosis from mother to child by the passage of tuberculous virus during the period of gestation. Such passage of virus is more important than has been supposed. Tuberculous infections of such origin are usually caused by ultramicroscopic elements which pass through porous porcelain filters, which are pathogenic for the guinea-pig and which the authors term "tuberculous ultravirus." The tubercle bacillus, the end-product of this ultravirus, represents, in fact, merely a more advanced stage of the filtrable elements, as has been shown by the researches of Professor Arloing of Lyons and of Dr. Vaudremer. These new ideas, according to M. Calmette, do not entail modification in the general regulations for the protection of children who are the offspring of tuberculous mothers. Such contagion is incontestably the most important factor in the infection of young children after birth. Proof of this fact may be secured by comparing the mortality from tuberculosis of children immediately separated from their tuberculous mothers or vaccinated by the B. C. G. (the new Calmette) vaccine, with the mortality of children born under the same conditions but not separated immediately and not vaccinated.

The Fiftieth Anniversary of the Ecole d'Anthropologie

The fiftieth anniversary of the foundation of the Ecole d'anthropologie was celebrated, November 3, in the quarters that it has occupied during the whole period of its existence —located on the third floor of an old dilapidated building, which was formerly the chapel of the Franciscan friars, and, during the revolution that followed, was, in 1789, the home of a club, celebrated in French history, in which Danton and Robespierre were the leading orators. It houses today the Museum of Pathologic Anatomy, commonly called the Dupuytren Museum, which is one of the oldest museums of the kind in the world and which contains one of the richest collections of anatomic specimens and wax molds. It was here that the French surgeon Broca (1824-1880) opened, in 1876,

a free course in anthropology which neither the Faculty of Medicine nor any other official institution had wished to accept, for his theories were in contravention of the religious ideas that prevailed in official circles. Broca gathered about him many eminent pupils—De Mortillet, Hervé, Hamy, Capitan and others, who later aided in the propagation of his ideas and took over the various departments of the school, which gradually came to include paleontology, prehistorics, ethnology, geography as pertaining to man, philology and eugenics. The school founded the *Revue d'anthropologie* and organized the International Institute of Anthropology, which today has ramifications in all civilized countries. The inaugural ceremony took place under the chairmanship of M. Louis Marin. M. Marin outlined the history of the school, which was at first entirely dependent on its own resources, only gradually coming to receive subsidies from the municipal council of Paris, then from the department of the Seine, and finally from the ministry of public instruction. No less than 200,000 pupils have passed through its portals and it has made possible many valuable discoveries. Prof. Georges Hervé, Professor Papillant and Professor Capitan discussed some of these discoveries in detail and pointed out the rôle that they had played in the evolution of science in general and in shaping the colonial politics of France.

Catheterization of the Ejaculatory Ducts

Catheterization of the ejaculatory ducts was the subject of several papers presented at the recent Congress of Urology, which is evidence that this practice is becoming more general in France. Dr. Le Fur described a technic which enables the operator to penetrate the seminal vesicles in 75 per cent of the cases. The results are excellent, effecting suppression of pain caused by vesicular retention; also elimination of chronic inflammation of the vesicle and, finally, relief from the repeated attacks of epididymitis often associated with such conditions. It is advisable to accompany such treatment by massage of the vesicle; sometimes the injection of collargol into the vesicle is indicated.

Dr. Luys advocated the disinfection of the vesicle by the injection of collargol through the vas deferens, which he opens up by a small incision at the base of the scrotum. He has performed this operation in several hundred cases without any untoward consequences. The collargol is retained in the vesicle for a week, and the first ejaculation that occurs has a black tinge. Stenosis of the vas deferens has never resulted from the operation as performed by Dr. Luys.

JAPAN

(From Our Regular Correspondent)

Nov. 10, 1926.

The Imperial Academy Hall

The new building of the Imperial Academy Hall in Ueno Park was completed at the end of September. The quiet colors of the building add much to its appearance against the green of the old trees of the park, and the superb interior decorations are quite worthy of a hall built for the use of the most learned circles in this country.

Investigations of Backward Children

The sanitary bureau of the Tokyo Muncipal Office and the Tokyo Imperial University have investigated the physical condition of 219 boys and 219 girls from the special classes of twenty-one primary schools in the city.

The ages of the children were between 7 and 15 years; the greatest number were 10 years old, and next in order were those of 11 or 9 years. Of these children, 86.6 per cent were enrolled in the special classes owing to their poor records in lessons; 3.86 per cent because of maldevelopment, mental and physical; 3.86 per cent owing to poor records and eccentric personality; 3.59 per cent in consequence of low intelligence. Contrary to the proverb that "the eldest is proverbially a blockhead," 21.9 per cent were children of the third birth; 19.86 per cent of the first birth; 18.49 per cent of the second birth; 12.32 per cent of the fifth, and so on. A large percentage gave histories of infection or trauma.

Japanese Zoologist to the Rockefeller Institute

C. Ishikawa, D.S.C., former professor in the Tokyo Imperial University, who received a call from the Rockefeller Institute, left Yokohama, October 16. He is taking with him the spawns of the Japanese oyster, clam and sweetfish (*Plecoglocuss altivelis*), and will endeavor to make them thrive in America and Hawaii.

Conditions for Foreign Practitioners

In reply to the inquiries made by the British Central Practitioners' Association concerning the conditions under which foreign dentists are allowed to establish themselves in this country, the Japanese authorities replied in part, as follows:

1. Unlicensed practitioners are not allowed to establish themselves in this country. 2. Those who are registered in the British practitioners' list may demand a Japanese license of the Japanese home ministry, but they must register themselves in the Japanese list also.

Police Physicians on Night Duty

The Metropolitan Police has established a new regulation that all Tokyo police stations shall have a physician on night duty. This physician may be called to treat sick or wounded persons in their homes.

The Japan Medical Association

The fourth general meeting of the Japan Medical Association was held in Tokyo, October 22 and 23. Debated topics were the income tax imposed on the reserve fund of the local branch associations, and the contract to be made between the government and the association regarding the health insurance law.

General Booth in Japan

October 16, General Booth of the Salvation Army visited the sanatorium established by the army in a suburb of Tokyo. He was informed that the Salvation Army hospital in Shitaya, Tokyo, which was destroyed by the earthquake, would be rebuilt on a larger scale with the aid of donations from the headquarters of the army, the Japanese government, and others. The hospital will be completed by the end of next year.

Protection of Female Workers

The authorities have decided to consider miscarriages in and after the fourth month, among female workers in factories and mines, the same as ordinary childbirth. Consequently, the women will be given six weeks' rest after miscarriage, and will be allowed both the expenses of the illness and 60 per cent of their wages during the confinement.

Personals

L. E. de Gield, assistant to the director general of the League of the International Red Cross Society, arrived at Yokohama, October 12, and will attend the second conference of the Far East Red Cross League, to be held in Tokyo, beginning November 15.——Prof. Dr. G. Kato of the medical college of Keio University, who has been to the International Physiology Congress in Stockholm to make an experimental report on his theory of decrement conduction, returned home, October 12.——October 16,

Dr. M. Miyajima of the Kitasata Institute left Yokohama for America, accepting a call from the Rockefeller Institute. —Prof. Dr. F. Ishiwara, senior professor of the Dental Institute of the Tokyo Imperial University, has reached the age limit of professorship, and has tendered his resignation. Prof. Dr. M. Tsutsuki, now in Germany, will succeed him. —Mr. G. Kato, health official, will attended the first Pacific Health Conference, to be held for three weeks during December this year in Melbourne.——Dr. R. Inada, professor in the Tokyo Imperial University, has been appointed unattached court physician of the imperial household.

Dr. Ogawa has retired as dean of the Kyoto Prefectural Medical College, and has entered practice in Kyoto.

Dr. Y. Sata, ex-dean of the Osaka Prefectural Medical College, has been practicing medicine in Osaka and publishing a magazine *Germano-Japanese Sciences* since his retirement from the post. He has recently accepted the call of Berlin University, and will go to Germany next May.

Accompanied by Prince Tokugawa, Prof. J. Shimazono of the medical college of Tokyo Imperial University left Kobe, recently, for the South Sea Islands to make investigations of beriberi.

Dr. T. Sato, vice director of the Far East branch in the health work of the League of Nations, has left for his post in Singapore.

The American University World Cruise

The American University Afloat arrived at Yokohama, November 4, and the 582 students and their professors visited various places of interest in Japan. On the evening of their arrival in Japan, they gave three banzais in Japanese, and published a "Japan number" of their newspaper on board. The National Students' Y. M. C. A. and other English speaking societies here furnished for the foreign guests Japanese student guides who can speak English well.

Judge John B. Payne Welcomed

October 26, Judge John B. Payne, general secretary of the American Red Cross League, arrived in Tokyo with a gift of a Red Cross Flag from Sir Claud Hill, chairman of the league. He came here as the American delegate of the second conference of the Far East Red Cross League as well as a member of the Pan-Pacific Science Congress. A banquet was given in his honor at the Koyokwan Restaurant in Tokyo, October 29, and Mr. Hamaguchi, the home minister, delivered an address of welcome.

GENEVA

(From Our Regular Correspondent)

Nov. 10, 1926.

Death of Edouard Naville

Historians of medicine will regret the death of Edouard Naville of Geneva, vice president of the International Red Cross. He was born in 1844. Mr. Naville has revealed much of the history and religion of ancient Egypt. After his early education in Geneva, Mr. Naville studied at King's College, London, of which he subsequently became a fellow. This was followed by residence at the universities of Paris, Berlin and Bonn. He became especially prominent by his work on the Egyptian "Book of the Dead" and the elucidation of funeral papyri. He was a profuse writer on biblical subjects. One of his latest and most erudite works is "La haute critique dans le Pentateuque." Just before the Great War he published a valuable work on Old Testament archeology. He performed excellent service in connection with the Red Cross.

Medical Control of Sports

At a recent meeting of the Geneva Medical Society, the dangers of sports and their medical control were discussed. Dr. Jentzer remarked that sports as at present carried out weaken children instead of strengthening them, and that it is the physician's duty to prevent these dangers arising. The muscular system is not adult until the age of 21 or 22. The Geneva laws do not provide for hygienic control over children from 15 to 19 years of age attending the normal schools, just at a time when such control is most necessary. Identical medical regulations should be made for all Switzerland and should be applied to each sport, so that individuals not qualified for them could be excluded. The speaker said that a medical athletic committee should be appointed in Geneva which would control sports among schoolchildren and which would do away with championship exhibitions organized by the press. The object of the committee would be to develop a strong youth, but above all to stabilize physical training.

In the discussion that followed, Dr. Charles Saloz referred to the athlete's heart. He said that as yet there is no test by which athlete's heart can be recognized. Certain physicians assert that the characteristic hypertrophy and dilatation of the heart are physiologic, but Saloz considers this dangerous teaching. A heart hypertrophied from sports will remain so for several years after removal of the cause. The hypertrophy involves the left heart and is diagnosed only after careful examination. Changes in the pulse and blood pressure do not give sufficient data for making a prognosis of cardiac resistance. Orthoroentgenography is not as exact as Bordet led us to suspect. In fact, dilatation of the heart is more apparent than real, because it is the change in the position of the diaphragm that causes the images to vary.

Dr. Gilbert said that he had made thousands of roentgenologic examinations in recruiting stations and regarded them as most useful in sorting out the men. He recognizes the "bicylist heart." Certain constitutional defects, even pulsating goiters, are detected by this means of examination.

Dr. Knoll of Arosa said that the importance of medical supervision will be understood when it is recalled that, at Saint Gallen, examination of 200 athletes revealed tuberculosis, cardiac lesions and nephritis in several of them. Detection of diseases at their onset is most important in these subjects. At Arosa, before medical control was established in skiing, it was noted that 50 per cent of the subjects were in bad condition at the end of the course. At present the percentage has dropped to 1 per cent and most persons are now willing to submit to medical examination and control before starting in on the skiing course.

From the point of view of a recruiting officer, Dr. Rychner believes that farmers, being better nourished, are better physically than athletes drawn from industrial centers, because the latter are not so well fed. He thinks that sports should be regarded as physical exercises and should not take the form of competitive exhibitions to establish championships.

Cryotherapy

In a recent thesis (Paris, 1926), Solente studies the indications for cryotherapy based on the effects produced by local refrigeration. Cryotherapy causes constriction of the blood vessels followed by dilatation—a circulatory stimulation adapted for facial erythroses and intranasal granulosis. If continued, the refrigerating action produces thrombosis of the small vessels, a prelude to constriction, or even occlusion. Cryotherapy can therefore be used for the treatment of various forms of angiectasis, such as stellar nevi, angiomas, acne rosacea, angiokeratoma and rhinophyma. Consequent upon the vascular changes, the cellular and liquid infiltrates contained in the cutaneous structures are absorbed. If the subjacent epidermis is absent, cicatrization of torpid ulcers may ensue, while if it is intact, phlyctenae form. These are

followed by exfoliation, a process useful in removing tattooing, corns, the verrucae of chronic radiodermatitis and xanthoma. The action of cryotherapy on the connective tissue makes it efficacious in the treatment of keloids, keloid acne and even in localized scleroderma. The reaction of the nerve tissue explains the favorable action of cold on neurodermatitis and circumscribed pruritus. The cell changes occurring in the epidermis, and the exfoliation and regeneration that it undergoes, make cryotherapy useful in the treatment of leukoplakia, lichen planus of the mucosa and senile verruca, as well as in areas of polymorphous acne. Other diseases in which the effects of cryotherapy are remarkable and which derive their benefit from the ensuing superficial necrosis followed by exfoliation are milium, papilloma, keratosis, small circumscribed cutaneous basocellular epithelioma, dermatitis of Paget's and Bowen's types, and progressive lenticular melanosis. On the growth of hair and on pigmentation, cryotherapy, when used in mild doses, has stimulating properties and hence is indicated in alopecia, vitiligo and localized pigmentation, such as lentigo, ephelis and chloasma except that due to pregnancy. As a stimulant for local defense, cryotherapy may cure certain circumscribed toxic or microbic conditions caused by filtrating viruses, such as erythematous lupus, skin tubercles or tuberous leprosy and trachoma.

BERLIN

(From Our Regular Correspondent)

Nov. 13, 1926.

Transmission of Scarlet Fever

Addressing the Berliner medizinische Gesellschaft, Professor Friedemann and his assistant Deicher stated that, owing to the discovery of the infective agent of scarlet fever by the American investigator Dick, we have made progress in scarlet fever. An antitoxic serum prepared from the causative agent produced favorable results in their sick-ward in more than 100 cases. Friedemann and Deicher have discovered that the streptococcus is propagated in the tonsils, but that it is found also in secretions of pus in other parts of the body; for example, in pus secretion of otitis media, which is so often associated with scarlet fever. In fifty cases it was found only once in the cutaneous scales, and was due merely to accidental superficial attachment, as may occur in inanimate objects. Further researches have revealed that the causative agent is found in large numbers on the walls, beds, curtains and utensils, and also in the air, of rooms occupied by scarlet fever patients. This obsevation points to the need of a thorough terminal disinfection. In some instances, the causative agent was found on the pharyngeal tonsil six weeks after the onset of the disease. There is therefore a possibility of a patient infecting others after the lapse of six weeks, which is usually regarded as sufficiently long for the isolation of patients. It is wise to remove a patient to another room during the last weeks of the quarantine, in order to get him away from the infective organisms floating about the sick-room.

The Meeting of the Society of German Scientists and Physicians

THE COMPTON EFFECT

In the section on roentgenology, the scientific discussions were opened by a paper by W. Friedrich of Berlin on "Der Comptoneffekt und seine Bedeutung für die Strahlentherapie." The "Compton effect" sets forth that the dispersion of roentgen rays, contrary to the usual conception of electrodynamics, is characterized by an increase in wave lengths, and simultaneously there is an emission of slow beta-radiation. The author explained the manifestations of the new effect by means of experimental and theoretical researches, and then gave an account of investigations on the medical application of the rays. He discussed the importance of the effect for roentgenotherapy, and especially for dosimetry.

G. A. Wagner of Prague discussed roentgenotherapy as applied to inflammatory infections in gynecologic cases. There are two methods of applying roentgen rays in such cases. The first method essays only to influence the activity of the generative glands. The second method aims to influence the inflammatory focus itself through the direct action of the rays, care being taken to avoid injury to the generative glands. The author believes that the second method should be considered in cases in which conservative treatment of inflammation is indicated. The technic and dosage are dependent on the localization and extent of the process and the general condition and age of the patient. Subjective improvement is frequent as a primary result. Objectively, there is fall of temperature, although occasionally the temperature rises for a time following the primary fall and after the second irradiation falls again. Blood changes also take place. In nine cases, complete recovery could be demonstrated by the occurrence of pregnancy. The best results were secured in true puerperal parametritis (100 per cent); the results were satisfactory also in gonorrheal inflammation. Failures and bad results were noted particularly in elderly women.

OVARIAN IRRADIATION AND OFFSPRING

Another topic was the question "Ovarian Irradiation and Offspring." Nürnberger of Halle explained that injury to the germ-cells by roentgen rays may express itself in the following manner: (1) if impregnation occurs before roentgen sterility is produced, (*a*) phanic (apparent, external) injury of offspring, (*b*) genic (invisible, psychic) injury of offspring, and (2) if impregnation occurs after roentgen-ray sterility has run its course, (*a*) phanic injury, (*b*) genic injury. The facts are difficult to interpret. The second speaker, H. Martius of Göttingen, pointed out that the observations of germ cell injury are not sufficiently numerous to decide whether or not observed anomalies are actually due to roentgen-ray injuries, or whether children who appear healthy at first may not have received injuries that will appear later. In any event, in every irradiation of the ovaries during the reproductive period in women, whether with roentgen or with radium rays, the danger for the immediate offspring, and, secondly, the danger of the appearance of hereditary injuries, must be taken into account.

CONGENITAL SYPHILIS

Gammeltoft of Copenhagen presented a paper on "Congenital Syphilis." Of the parturients in the Royal Hospital in Copenhagen, 5.5 per cent had syphilis, which corresponds closely with the percentages observed in other hospitals. The most important point in combating congenital syphilis is to subject the prospective mother to antisyphilitic treatment as early as possible during pregnancy. Since by this method the percentage of syphilitic children is greatly reduced, every pregnant woman who has ever been infected with syphilis must be given antisyphilitic treatment, irrespective of the time of the infection or the outcome of the Wassermann test (which should however always be given), and even though she may have previously given birth to a healthy child. It is best for syphilitic children to remain with the mother and to be treated along with her; otherwise they must be treated for several years in special homes. In doubtful cases, children should be examined at regular intervals until it has become certain that they are not infected. For the preventive treatment during pregnancy, no charges should be assessed to the mother. It would be advantageous if everywhere regulations could be passed corresponding to the Danish law: "If a patient refuses to accept treatment, or if he fails to appear at the appointed times after treatment has begun, it is the duty of the physician to see to it that he is summoned by the police

to appear at a clinic. If it seems advisable, the patient may be compelled to enter a hospital for treatment."

OCCUPATIONAL DERMATOSES

The section on dermatology took up the topic, "Occupational Dermatoses with Special Relation to Industry." The subject was discussed by Jadassohn of Breslau and Bloch of Zurich. Injury does not necessarily result when conditions for the harmful effect are present. An essential is a predisposition to the disease. Touton of Wiesbaden gave a detailed account of phytogenous industrial dermatoses. The discovery of evidences of sensitiveness and the determination of their causes are comparatively easy in large manufacturing plants in which identically the same irritants act on unequally sensitive skins. In a person truly idiosyncratic, the eruption will appear on the first contact with minimal amounts of the irritant; a second group becomes susceptible only after long contact, and a third group remains unsusceptible to every contact. There is also a large number of plants and plant derivatives which cause skin irritation or cutaneous inflammation in every person; for example, croton oil and volatile oil of mustard. In the vegetable canning factories of Brunswick, it was found that a large number of workers may be engaged, some for a shorter and some for a longer period, in the processing of asparagus without evidence of harmful action, until they finally become sensitized. It was brought out that, in some instances, skin diseases are caused not by the plants themselves but by some form of parasitic fungus, hairy caterpillars or mites, or even mechanical factors. Of plants that cause skin eruptions, the most important are the Japanese (and other) primroses, and North American and Japanese varieties of sumac (*Rhus*). In woodworkers, especially polishers and varnishers, the sawdust, and in the latter the turpentine, plays a significant rôle; in orange peelers, the ethereal oil from the peeling is the offending substance, while workmen in chemical factories may be affected by many different substances.

Marriages

JOE TAYLOR SMITH, Knoxville, Tenn., to Miss Josephine Streeby of Kansas City, Mo., at Nashville, September 16.

FLOYD RAYMOND NICHOLAS CARTER to Miss Marjorie Josephine Decker, both of South Bend, Ind., November 3.

JOHN DOUGLAS GRAHAM, Starkweather, N. D., to Miss Helen L. McLaren of Toronto, Ont., November 24.

WILLIAM SCHLAFLY MCGINNIS, Alton, Ill., to Miss Marguerite Blong Kennedy of St. Louis, October 14.

H. N. ANDERSON, Independence, Iowa, to Miss Genevieve Schug of Strawberry Point, at Dubuque, July 22.

ALLEN GRANT FLYTHE to Miss Catherine Elizabeth Rasbury, both of Dallas, Texas, November 10.

NATHAN P. STAUFFER, Lansdowne, Pa., to Mrs. Margaret Latta Rees of Philadelphia, November 24.

JOSEPH THOMPSON GRAHAM, Drapers, Va., to Miss Elsie Carlize Krengel of Richmond, recently.

JAMES D. HOLLIMAN to Miss Josephine Nichols, both of New Hope, Ala., November 24.

GEORGE RUSSELL IRVING to Miss Alda Beecher Elliott, both of New York, November 24.

JAMES F. HUNTER, Turtle Creek, Pa., to Miss E. Maye Myers of Julian, October 7.

WESLEY J. MORRISON, Cedar Rapids, Iowa, to Miss Clara Clark of Riceville, July 27.

HENRY CLAY LONG to Miss Annette Steele, both of Knoxville, Tenn., September 17.

JOHN K. GORDON, Chambersburg, Pa., to Miss Alice Childs of Norristown, October 21.

JOSEPH K. FISHER to Miss Anna L. Fell, both of Sunbury, Pa., September 18.

Deaths

Albert Edward Halstead ✠ Chicago; Chicago Medical College, 1890; professor of anatomy and head of the department, 1898-1901, and professor of surgery, 1901-1907, Northwestern University Medical School; for many years attending surgeon at Cook County Hospital; since 1912 professor of surgery, University of Illinois College of Medicine; member of International Surgical Association, the American Surgical Association and the Western Surgical Association; went to France during the World War with Base Hospital No. 53, and later served as chief surgeon at Hospital Center No. 68 at Le Mans; author of chapters on brain surgery in various surgical works and numerous other treatises on that subject; president of the medical board, 1913-1917, and since 1901 attending senior surgeon, St. Luke's Hospital, where he died, December 6, of coronary thrombosis, aged 58.

Edgar Thomson Shields ✠ Harrisburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1906; for more than six years a medical missionary in China; formerly on the staff of the Barlow Sanatorium, Los Angeles, and the Trudeau (N. Y.) Sanatorium; for three years assistant field secretary of the National Tuberculosis Association; director of the section on tuberculosis, Pennsylvania Department of Health; aged 49; died, November 22, of septic endocarditis, following an appendectomy.

Ernest Simons Bishop ✠ New York; Cornell University Medical College, New York, 1908; member of the American College of Physicians; on the staffs of the Workhouse, St. Mark's and St. Joseph's hospitals; consulting physician to the New York State Prison Commission since 1919; author of "The Narcotic Drug Problem"; aged 49; died, November 15, of heart disease.

John Ryder Wellington ✠ Washington, D. C.; George Washington University Medical School, Washington, D. C., 1891; past president of the Medical Society of the District of Columbia; formerly clinical professor of surgery at his alma mater; on the staffs of the Garfield, Casualty and Children's hospitals; aged 61; died, November 20, of myocarditis following a long illness.

Henry Herbert Boom, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1885; professor of chemistry, materia medica and metallurgy, Temple University School of Dentistry; at one time on the staff of the Garretson Hospital; served during the World War; aged 64; died, October 24, at the Samaritan Hospital, of chronic nephritis and uremia.

Samuel Hawkins Buteau ✠ Oakland, Calif.; Cooper Medical College, San Francisco, 1889; past president of the state board of medical examiners, member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; aged 62; founder and on the staff of the Merritt Hospital, where he died, October 28, of heart disease.

Henry Hording Dodson, Greensboro, N. C.; Medical College of Virginia, Richmond, 1882; member of the Medical Society of the State of North Carolina; formerly member of the state board of medical examiners and the board of health; aged 71; died, October 22, of valvular heart disease.

William Hasty Flint ✠ Santa Barbara, Calif.; Bellevue Hospital Medical College, 1877; past president of the Santa Barbara County Medical Society; formerly on the staff of the Presbyterian Hospital, New York; aged 74; died, September 5, of arteriosclerosis and bronchiectasis.

Herman Olans, Arverne, N. Y.; Tufts College Medical School, Boston, 1920; member of the Medical Society of the State of New York; on the staff of the Rockaway Beach Hospital; aged 32; died, November 21, at his home in Far Rockaway, of coronary thrombosis.

Charles Herman Clark, Lima, Ohio; Starling Medical College, Columbus, 1893; member of the Ohio State Medical Association, and the American Psychiatric Association; superintendent of the Lima State Hospital; aged 59; died, November 15, of chronic nephritis.

Frederick William Fischbach, Cincinnati; Pulte Medical College, Cincinnati, 1889; formerly professor of the practice of medicine at his alma mater; aged 65; on the staff of the Bethesda Hospital, where he died, October 29, of ileus following an operation.

John Barge Ague, Beaver Falls, Pa.; Bellevue Hospital Medical College, New York, 1889; member of the Medical Society of the State of Pennsylvania; past president of the Beaver County Medical Society; aged 67; died, October 21, of ruptured aorta.

Edwin B. Mauk, Delphos, Ohio; Western Reserve University School of Medicine, Cleveland, 1881; Rush Medical College, Chicago, 1892; member of the Ohio State Medical Association; aged 71; died, November 13, as the result of disease of the prostate.

Albert Comstock, Brooklyn; New York Homeopathic Medical College and Flower Hospital, New York, 1913; on the staffs of the Cumberland, Carson C. Peck Memorial and the Prospect Heights hospitals; aged 36; died, October 29, of heart disease.

C. O. Bryan, Center, Texas; Memphis Hospital Medical College, 1890; professor of surgery and gynecology, Dallas Medical College, 1901-1903; member of the State Medical Association of Texas; aged 59; died in November, of encephalitis.

Clarence Fontaine-Maury Leidy ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1895; served during the World War; aged 53; died, November 26, at the Walter Reed Hospital, Washington, D. C., of heart disease.

Henry Haven Swift ✠ Pittsford, Vt.; University of Vermont College of Medicine, Burlington, 1880; on the staffs of the Proctor (Vt.) Hospital and the Rutland (Vt.) Hospital; aged 71; died, November 13, of injuries received in a fall.

Arthur J. Clay, Hoopeston, Ill.; St. Louis University School of Medicine, 1906; member of the Illinois State Medical Society; for many years health officer of Hoopeston; aged 49; died, November 11, of acute dilatation of the heart.

Edwin Harrison Kistler ✠ Lansford, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1870; past president of the Lehigh Valley Medical Society; aged 83; died, September 30, of lobar pneumonia.

Ira W. Seybold ✠ Poplar Bluff, Mo.; Baltimore Medical College, 1893; past president and secretary of the Butler County Medical Society; formerly county coroner; aged 57; died, November 12, of heart disease.

Edwin Elmer Sheffield ✠ Elyria, Ohio; University of Michigan Medical School, Ann Arbor, 1892; aged 62; on the staff of the Elyria Memorial Hospital, where he died, August 10, of general peritonitis.

Lucius Douglas Tompkins, Trenton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1877; formerly on the staff of the Mercer Hospital; aged 70; died, November 5, of cardiac asthma.

James H. Beaty ✠ St. Cloud, Minn.; University of Minnesota Medical School, Minneapolis, 1895; aged 56; died, November 27, at St. Raphael's Hospital, of meningitis following an infection of the ear.

Louis Henry Mestemacher ✠ St. Louis; Washington University Medical School, St. Louis, 1911; served during the World War; aged 37; died, October 26, at St. Mary's Hospital, of cellulitis of the axilla.

Robert M. O'Ferrall, Piqua, Ohio; Medical College of Ohio, Cincinnati, 1880; member of the Ohio State Medical Association; aged 70; died, November 15, at the Memorial Hospital, of cerebral hemorrhage.

Charles Roy Darrow, Fort Lauderdale, Fla.; Chicago College of Medicine and Surgery, 1909; member of the Florida Medical Association; aged 55; died, October 23, of a self-inflicted bullet wound.

Joseph Louville Bennett, Bridgton, Maine; Medical School of Maine, Portland, 1869; member of the Maine Medical Association; Civil War veteran; aged 84; died, October 28, of chronic myocarditis.

Charles S. Wilson ✠ Johnson City, N. Y.; University of Buffalo Department of Medicine, 1900; on the staff of the Johnson City General Hospital; aged 52; died, November 14, of angina pectoris.

Samuel Ward Dodd, Montclair, N. J.; Columbia University College of Physicians and Surgeons, New York, 1905; aged 47; died, October 29, of an overdose of chloral hydrate, taken accidentally.

Charles Carrol Cotton, Elwood, Ind.; University of Louisville (Ky.) School of Medicine, 1891; member of the Indiana State Medical Association; aged 61; died, November 13, of chronic nephritis.

Theodore H. Newland, Poughkeepsie, N. Y.; Missouri Medical College, St. Louis, 1873; aged 69; died, November 16, at the Vassar Brothers Hospital, of heart disease and arteriosclerosis.

William Storey, Castalia, Ohio; Bellevue Hospital Medical College, New York, 1869; past president of the Erie County Medical Society; aged 77; died, November 11, of arteriosclerosis.

Louis Alward Johnson ✠ Washington, D. C.; Georgetown University School of Medicine, Washington, 1892; served during the World War; aged 56; died, November 28, of heart disease.

Theodore Borroum, Corinth, Miss.; Bellevue Hospital Medical College, New York, 1896; member of the Mississippi State Medical Association; aged 52; died, October 17, of brain tumor.

W. H. Harrison, Herington, Kan.; University Medical College of Kansas City, Mo., 1897; aged 62; died, October 31, at the Presbyterian Hospital, Chicago, of dilatation of the heart.

Thomas Clifton Coons, Lexington, Ky.; University of Louisville School of Medicine, 1875; aged 77; died, October 21, as the result of an injury received in a fall two years ago.

E. L. Garner, Mammoth Spring, Ark. (licensed, Arkansas, 1903); mayor of Mammoth Spring; formerly county health officer; aged 47; died suddenly, October 18, of heart disease.

Charles Franklin Bennett, Waterloo, Iowa; Chicago Homeopathic Medical College, 1884; aged 65; died, November 3, at the Presbyterian Hospital, of an injury received in a fall.

Henry Sinclair Delamere ✠ Berkeley, Calif.; University of Vermont College of Medicine, Burlington, 1883; aged 67; died, November 4, at the Alta Bates Hospital, of pneumonia.

Madison Finley Pennington, Columbus, Ga.; Atlanta School of Medicine, 1909; member of the Medical Association of Georgia; aged 42; died, October 24, of cerebral hemorrhage.

Horace Burnett Fenton, Portland, Ore.; Johns Hopkins University Medical Department, Baltimore, 1910; aged 42; died, November 7, at St. Vincent's Hospital, of pneumonia.

Hiram D. Glass, Lambert, Miss.; Memphis Hospital Medical College, 1898; member of the Mississippi State Medical Association; aged 50; died, November 6, of heart disease.

James N. Strosnider, Sidney, Ohio; Eclectic Medical Institute, Cincinnati, 1899; aged 54; died, November 3, at St. Elizabeth's Hospital, Dayton, of an injury received in a fall.

Albert Clinton Dedrick, Fall River, Mass.; Bellevue Hospital Medical College, New York, 1888; served during the World War; aged 61; died, November 15, of pneumonia.

George E. Rouse, Hamersville, Ohio; Eclectic Medical Institute, Cincinnati, 1893; member of the Ohio State Medical Association; aged 61; died, October 22, of heart disease.

James R. Anthony, Indianapolis; Medical College of Ohio, Cincinnati, 1874; Civil War veteran; aged 82; died, November 4, of hypertrophy of the prostate and heart disease.

Harlan E. Trask, Chicago; Central College of Physicians and Surgeons, Indianapolis, 1896; member of the Illinois State Medical Society; aged 57; died, July 2, of carcinoma.

John Donley, Columbus, Ohio; Ohio Medical University, Columbus, 1899; member of the Ohio State Medical Association; aged 57; died, November 4, of heart disease.

John W. Thompson, Lincoln, Neb.; Starling Medical College, Columbus, 1885; formerly coroner of Furnas County; aged 66; died, November 13, of lobar pneumonia.

Mugerditch D. Hachadoorian, Philadelphia; Jefferson Medical College, Philadelphia, 1891; aged 61; died, November 8, of chronic myocarditis and interstitial nephritis.

William Seward Webb, Shelbourne, Vt.; Medical Department of Columbia College, New York, 1875; aged 75; died, October 29, of acute dilatation of the heart.

Orrin Cady, Cincinnati; Cincinnati College of Medicine and Surgery, 1885; aged 75; died, October 18, at the Christ Hospital, of chronic myocarditis and nephritis.

Richard Raikes, Midland, Ont., Canada; Trinity Medical College, Toronto, 1881; L.R.C.P., Edinburgh, Scotland, 1881; aged 67; died recently, of pneumonia.

Spencer C. Wernham, Marengo, Ill.; Rush Medical College, Chicago, 1874; aged 80; died, November 24, at St. Joseph's Hosptial, Elgin, of lobar pneumonia.

James Luther Akins ✠ Kinston, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1911; aged 41; died, November 11, of chronic nephritis.

Isaac Abram Foster ✠ Zeigler, Ill.; St. Louis College of Physicians and Surgeons, 1891; aged 64; died, December 1, of duodenal ulcer and peritonitis.

Jesse W. Cartlich, Kansas City, Mo.; Pulte Medical College, Cincinnati, 1883; Civil War veteran; aged 80; died, November 12, of mitral stenosis.

Oliver Henry Radkey, Austin, Texas; University of Texas Department of Medicine, Galveston, 1900; aged 51; died, October 22, of chronic nephritis.

Edward M. Hooper, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1896; died, September 20, at the Toronto General Hospital.

William E. Widener, Tippecanoe City, Ohio; Rush Medical College, Chicago, 1890; aged 62; died, November 25, of toxemia following ulcers of legs.

Hamilton Fisk Biggar ✠ Cleveland; Cleveland University of Medicine and Surgery, 1866; aged 87; died, November 29, of carcinoma of the bladder.

Claude E. Thompson, Winterset, Iowa; Drake University College of Medicine, Des Moines, 1908; aged 39; died, September 11, of heart disease.

Herbert Le Roy Jones ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1907; aged 44; died, October 24, of pulmonary hemorrhage.

Frank Travis Chaplain, Brooklyn; Hahnemann Medical College of Philadelphia, 1882; aged 71; died suddenly, November 22, of heart disease.

Frederick F. John, Milwaukee; Hahnemann Medical College and Hospital, Chicago, 1883; aged 63; died, October 23, of postoperative ileus.

Brodie Watson Parks, Bourbon, Ind.; Rush Medical College, Chicago, 1876; aged 74; died, October 31, of chronic nephritis and uremia.

Charles Oscar Wildasin, Cleveland; Eclectic Medical Institute, Cincinnati, 1884; aged 66; died, November 17, of heart disease and diabetes.

Helen M. Robertson, Middleport, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1889; aged 89; died in October, of senility.

Francis J. Snyder ✠ York, Pa.; College of Physicians and Surgeons, Baltimore, 1887; aged 62; died, October 11, of bronchopneumonia.

Peter H. Hulst, Greenwich, N. Y.; Albany Medical College, 1866; health officer of Greenwich; aged 85; died, November 3, of prostatitis.

Charles Blazo, Rochester, N. H.; Medical School of Maine, Portland, 1871; aged 84; died, October 20, of cerebral hemorrhage.

John T. Cobb, Buchanan, Ga.; Atlanta Medical College, 1889; aged 59; died, recently, at Cedartown, of chronic nephritis.

William McIntire Dickson, Waterford, Ohio; Starling Medical College, Columbus, 1897; aged 67; died, July 29, of paralysis.

James Henry Ferrell ✠ Birmingham, Ala.; Birmingham Medical College, 1901; aged 52; died, May 19, of arteriosclerosis.

Lesser Hirschkowitz ✠ San Francisco; University of Berlin, Germany, 1885; aged 67; died suddenly, October 27, of heart disease.

Benjamin D. Peaslee, Hillsboro, N. H.; Pulte Medical College, Cincinnati, 1885; aged 69; died, November 9, of angina pectoris.

Karl T. Warmeling, Cleveland; Medical College of Indiana, Indianapolis, 1897; aged 64; died, October 20, of angina pectoris.

Henry Clay Reid, Edmonton, Ky.; University of Louisville School of Medicine, 1875; aged 85; died, November 11, of senility.

Ira O. Paul, Rockford, Ill.; College of Physicians and Surgeons, Chicago, 1885; aged 66; died, November 17, of heart disease.

Benjamin S. Seay, Louisville, Ky.; Louisville Medical College, 1891; aged 62; died, October 9, of heart disease.

Frederick G. Wachtendorf, Rarden, Ohio; Eclectic Medical Institute, Cincinnati, 1902; aged 57; drowned in August.

Otto M. De Kieffer ✠ Chicago; Jenner Medical College, Chicago, 1908; aged 60; died, October 30, of myocarditis.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THERAPEUTICS—ANNO DOMINI 1926

Does the "Archives of Therapeutics" Represent Modern Medical Thought?

Twenty years ago the medical profession of America was burdened with a number of publications—alleged to be journals devoted to the science and art of medicine—which were as unscientific as a Lydia Pinkham "almanac." Today most of these pseudo-medical journals have passed into the limbo of forgotten fakes, although there are still a few that eke out a precarious living by selling their advertising pages to those nostrum exploiters who cannot obtain space in reputable medical publications. Such journals have never had any standing among the thinking members of the profession, and, generally speaking, have never had connected with their editorial or business managership any physicians of note.

The fight on the part of the medical profession of this country for more scientific therapeutics, as represented by the activities of the Council on Pharmacy and Chemistry of the American Medical Association and the articles that have appeared in THE JOURNAL of the American Medical Association, has been responsible for the clean-up. It is with surprise, mixed with chagrin, then, that one finds in the field of medical journalism today a publication of presumably respectable antecedents that seems to represent the scientific, or, more correctly, unscientific viewpoint common among the commercialized medical journals of a quarter of a century ago. The name of this anomaly is *Archives of Therapeutics*, published by the Archives of Therapeutics, Inc., 243 Fourth Avenue, New York City. On the title page of this alleged medical journal, there are given the names of the editor, managing editor and associate editors. The editor is Carl P. Sherwin, M.D., Sc.D., LL.D., New York, and the managing editor is Benjamin Harrow, Ph.D., New York. The list of associate editors, fifteen in number, is:

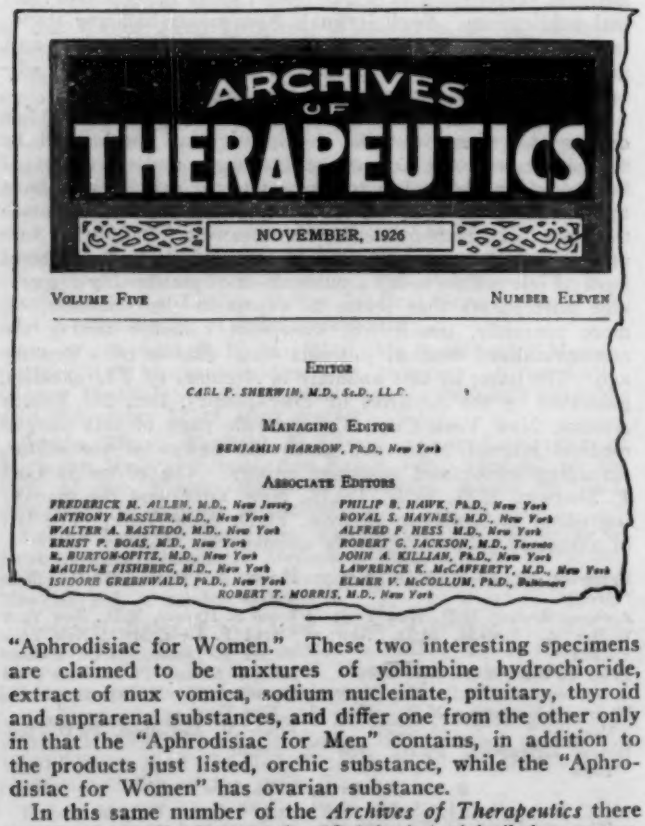
Frederick M. Allen, M.D., New Jersey
Anthony Bassler, M.D., New York
Walter A. Bastedo, M.D., New York
Ernst P. Boas, M.D., New York
R. Burton-Opitz, M.D., New York
Maurice Fishberg, M.D., New York
Isidore Greenwald, Ph.D., New York
Philip B. Hawk, Ph.D., New York
Royal S. Haynes, M.D., New York
Alfred F. Hess, M.D., New York
Robert G. Jackson, M.D., Toronto
John A. Killian, Ph.D., New York
Lawrence K. McCafferty, M.D., New York
Elmer V. McCollum, Ph.D., Baltimore
Robert T. Morris, M.D., New York

The *Archives of Therapeutics* is described on its cover as: "An independent Monthly devoted to therapeutics and dietetics for the medical profession." The November, 1926, issue contains twenty-nine pages of advertising. Twenty of the twenty-nine pages are devoted to advertisements of proprietary remedies, and sixteen of these twenty pages are of the display advertising type. Out of these sixteen pages of proprietary advertisements just two and a quarter pages are devoted to products that come up to the standards set by the Council on Pharmacy and Chemistry for acceptance in "New and Nonofficial Remedies." The other thirteen and three-quarters pages are of advertisements of nostrums, the great majority of which are not only unacceptable for "New and Nonofficial Remedies" but have been at one time or another the subject of critical reports by the Council on Pharmacy and Chemistry or of articles in THE JOURNAL of the American Medical Association. The names of some of these products, and the date and place in which articles about them can be found, follow:

ANICAN: Propaganda for Reform, Vol. 1, p. 43.
AGAROL: Journal A. M. A., May 30, 1925.
ANASARCIN: Propaganda for Reform, Vol. 1, p. 11; Vol. 2, pp. 383, 407.

ANTIPHLOGISTINE: Propaganda for Reform, Vol. 1, p. 409.
CAMPHO-PHENIQUE: Propaganda for Reform, Vol. 1, p. 40; Vol. 2, p. 418.
CACTINA PILLETS: Propaganda for Reform, Vol. 1, p. 37.
CHIONIA: Propaganda for Reform, Vol. 1, p. 28.
ECTHOL: Propaganda for Reform, Vol. 1, p. 81.
GRAY'S GLYCERIN TONIC: Propaganda for Reform, Vol. 2, pp. 24, 249.
HEXALET: Reports of the Council on Pharmacy and Chemistry, 1921.
HYPEROL: Propaganda for Reform, Vol. 1, p. 100.
PASADYNE: Propaganda for Reform, Vol. 1, p. 156.
PHILLIPS' PHOSPHO-MURIATAE OF QUININE: Propaganda for Reform, Vol. 2, p. 197.
PEACOCK'S BROMIDES: Propaganda for Reform, Vol. 1, p. 28; Vol. 2, p. 400.
PINEOLEUM: Propaganda for Reform, Vol. 2, p. 442.
PRUNOIDS: Propaganda for Reform, Vol. 1, pp. 178, 344.
SAL HEPATICA: Propaganda for Reform, Vol. 1, p. 179; Vol. 2, p. 451.
SANMETTO: Propaganda for Reform, Vol. 1, p. 182.

In addition to this impressive list of modern therapeutic agents, there is a full-page advertisement of "Orchaphrin Tablets," which are described as an "Aphrodisiac for Men," and another full page devoted to "Ovaphrin Tablets," an


ARCHIVES OF THERAPEUTICS

NOVEMBER, 1926

VOLUME FIVE NUMBER ELEVEN

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"Aphrodisiac for Women." These two interesting specimens are claimed to be mixtures of yohimbine hydrochioride, extract of nux vomica, sodium nucleinate, pituitary, thyroid and suprarenal substances, and differ one from the other only in that the "Aphrodisiac for Men" contains, in addition to the products just listed, orchic substance, while the "Aphrodisiac for Women" has ovarian substance.

In this same number of the *Archives of Therapeutics* there are four contributions to the "Original Articles" department. The title page of the magazine declares that "Articles are Accepted for Publication on Condition that They are Contributed Solely to this Journal." Information sent to the headquarters of the American Medical Association indicates that two of the four articles in the November issue were not only not contributed to the *Archives of Therapeutics*, but that the authors had not the slightest idea that they were going to be published. It is stated that they were prepared many years ago as student papers in a college course that was conducted, at that time, by Benjamin Harrow, who at present is the Managing Editor of the *Archives of Therapeutics*. The ethics of an instructor publishing, without the authors' consent, papers that were written many years previously as student exercises does not need to be enlarged on.

The choicest part of the entire magazine, however, is to be found in what is called the "Ready Reference Index," comprising four pages. The reader is told in other parts of the magazine, in large black face type: "Use the Ready Reference Index in Your Practice." The "Index" contains an alphabetical list of pathologic states, ranging from abscess, acne, adenitis and alcoholism, through bed sores, "biliousness," bronchitis and burns, with chancroids, chilblains, constipation and coryza down through the alphabet, touching among other things such high spots as eczema, epididymitis, epilepsy, goiter, gonorrhea, gout, headache, heart disease, hematuria, indigestion, insomnia, leucorrhea, lumbago, malaria and myalgia, pharyngitis, phthisis and prostatitis, tetanus, tonsillitis and toothache, to uremia, vaginitis and vomiting. Altogether there are 120 pathologic states alphabetically listed and for these there are 300 recommendations of proprietary remedies—all of them apparently products that are advertised in the *Archives of Therapeutics*.

For example, in acne one is told to use Dermatone and Endoferarsan; in amaurosis, Sal Hepatica; in anasarca, of course, Anasarcin, and also Theocalcin; in ardor-urinæ, Sanmetto; in arteriosclerosis, Burnham's Soluble Iodine; in arthritis, Alkalithia, Antiphlogistine, Papine and two or three others; in "intestinal autointoxication," Chionia, Gray's Glycerine Tonic, Peptenzyme, Phillips' Milk of Magnesia, Prunoids and Sal Hepatica; in "biliousness," one has the wide choice of Probilin Pills, Ago-cholan, Alkalithia, Chionia, Prunoids, or Phillips' Milk of Magnesia, as one's scientific judgment dictates. In "catarrhal conditions" use Gray's Glycerine Tonic or Lukosine; in cholecystitis rely on Ago-cholan; in conjunctivitis, Pond's Extract; in cystitis, Sanmetto or Tyree's Elixir Buchu and Hyoscyamus Compound; in epilepsy, Peacock's Bromides; in gastralgia, Seng; in acute gonorrhea, Gonosan, Guioleum or Sanmetto; in headache, Bromo-Caffeine, Nialgen or Sal Hepatica; in vaginitis, Bo-car-al, Keros Tablets, Lukosine and Tyree's Antiseptic Powder.

These are merely a few of the suggestions that this "independent monthly devoted to therapeutics" puts forward for those members of a supposedly learned profession who desire to follow the nickel-in-the-slot method of prescribing.

One expects this sort of thing in the cheap medical journals whose sole reason for existence is that of making a living for the owner. Generally, however, reputable members of the profession refuse to have their names connected with such poor excuses for medical journalism. In the case of the *Archives of Therapeutics*, the names of many men of unquestioned standing in the profession are given as having editorial connection with the publication. If these names have been used without the knowledge and consent of the men involved, the remedy is obvious. If on the other hand their use is due to an uncritical good nature on the part of these physicians, it would seem desirable that these editorial associates should either demand that the *Archives of Therapeutics* be brought up to their concept of what constitutes scientific medicine, or they should remove their names from the publication.

Correspondence

LOUIS XIV AND HIS OPERATION FOR FISTULA IN ANO

To the Editor:—An editorial writer in the current number of the *Annals of Medical History* quotes from Déqueret (Histoire du grand roi, 1924) an exceedingly interesting account of an operation for fistula in ano to which the Grand Monarch submitted at the hands of Felix, the leading French surgeon of his day, in the year 1686. The operation was a great success, and Felix's fame was secure; not only that but he was presented by the grateful king with a castle at Moulineaux and given a fee of 40,000 crowns besides. Many of Louis' courtiers desired the same operation that they might share some of the king's distinction. Dionin, next most prominent surgeon, stated that he angered more than thirty members of Louis' court by refusing their request to do this operation when he saw there was no need whatever for it.

No Grand Monarch rules today. But fashions in medicine and surgery are often influenced along lines that appear psychologically the same as those that operated in the court of the great Louis. For instance, what internist or neurol-

ogist has not been importuned for useless roentgen-ray examinations and various needless surgical operations of all sorts? Just now a despairing mother begs me to operate on the head of her boy suffering from an ordinary conventional case of dementia praecox. If a novel operation today were done on one of our monarchs of finance and detailed in the newspapers, surgeons all over the country would be importuned for the same operation. So while one may smile at the effect on his court of the great monarch's operation for fistula, can one say that human nature is any different today than it was in 1686? THEODORE DILLER, M.D., Pittsburgh.

EMPTYING OF THE GALLBLADDER

To the Editor:—I was greatly interested in reading your recent editorial on this subject in THE JOURNAL, September 18. In view of the importance of the subject I am induced to bring to your attention the recent work of Dr. Boyden at the Harvard Medical School, which is at variance with Kodama's results.

Dr. Boyden was the first to show in 1923 (*Anat. Record* **24**:388, 1923) that the vertebrate gallbladder (that of the cat) could be regularly and consistently emptied by an appropriate fat-containing material—egg yolk and cream—the "sogenannter Boyden meal der Amerikaner" (Herman).

In 1925 (*Anat. Record* **30**:333), following the introduction of the Graham method and following Sosman, Whitaker and Edson's independent discovery of the remarkable effect on the human gallbladder of eating butter, Boyden was able to demonstrate the emptying of his own gallbladder in less than three hours after a meal of egg yolk and cream. In the same paper he brings out the striking fact that the gallbladder of a cat, when completely contracted, contains as much smooth muscle, relatively, as the contracted small intestine of a guinea-pig. This fact led him to the reservation that in spite of appearances to the contrary, the gallbladder was not a passive organ, a reservation which was overlooked by Kodama and Higgins in their comment on Boyden's 1925 paper.

This prophecy was verified by his latest work (August, 1926, *Anat. Record*). Employing Whitaker's iodized oil method he has been able to show that smooth muscle drugs cause expulsion of bile from the gallbladder even against the secretory pressure of the liver as caused by ligation of the lower ducts. He was further able to demonstrate that epinephrine (with its implication of sympathetic nerve control) is the most powerful stimulant of the gallbladder musculature yet found, thus providing a mechanism which opens the sphincter at the same time that it contracts the gallbladder.

In the same paper by means of an extended series of cholecystographic studies on patients, he has shown that gallbladder contraction is correlated with liver secretion during digestion, gallbladder bile taking care of the first part of digestion and liver bile of the latter part.

It is interesting to note that his observations on the contractile power of the gallbladder are in accord with three other contemporary publications on this subject: that by Higgins and Mann (*Am. J. Physiol.* **78**:339, 1926), L. R. Whitaker (*ibid.*, p. 411), and McMaster and Elman (*J. Exper. Med.* **10**:151, 1926), all four together revealing a notable swing of the pendulum away from the prevailing view of the last decade that the gallbladder is a passive organ.

Since Dr. Boyden's work has been published chiefly in anatomic journals and is consequently not so likely to have been seen by most clinicians, I have taken the liberty of mentioning it in some detail, although fully appreciating the important work done by other recent investigators in this difficult field.

VICTOR E. EMMEL, Chicago.
Professor of Anatomy, University of Illinois College of Medicine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EXTRACTS OF COD LIVER OIL

To the Editor:—In the light of recent knowledge of the powerful vitamin qualities of fresh, pure cod liver oil, so interesting in that it justified in our day the faith of our grandfathers who used it empirically, are there any data available on unbiased investigations as to the real value of any of the many so-called extracts prepared in various combinations, frequently with malt preparations, and marketed by reputable firms? In other words, is it known to be possible to "extract" the vitamin factors of cod liver oil? Please omit my name.

M.D., Maine.

ANSWER.—Although it may not be entirely justified, on the basis of any existing experimental data, to assert categorically that it is impossible to prepare a potent extract of cod liver oil, so far as vitamin content is concerned, the available evidence points against the efficiency of the products that have been included in the "extract" category. Vitamins A and D, in which cod liver oil abounds, tend to dissolve with readiness in fats or fat solvents. The so-called extracts are usually at best weak alcoholic fluids of very doubtful solvent power so far as the vitamins referred to are concerned. Consequently the newest (1926) edition of Useful Drugs, prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, states that alcoholic preparations of the so-called active principles of cod liver oil have not been shown to be therapeutically active. Several of the products that have been analyzed have contained no "oil" of any sort, and were essentially free from ether-soluble matter. The malt extracts that may be incorporated with the proprietary mixtures may have potencies that cannot, however, be identified with the specific characteristics of the cod liver oil and should be independently evaluated. For example, some malt products are reputed to be somewhat antiscorbutic; they may contain vitamin B. Recently, vitamin concentrates have been prepared from cod liver oil by saponification of the latter, the potent substances being contained in the nonsaponifiable fractions (The Council has recently [THE JOURNAL, August 28, p. 671] accepted a cod liver oil concentrate that is a preparation of the nonsaponifiable fraction of cod liver oil in tablets, containing the antiophthalmic and antirachitic fat soluble vitamins). No such drastic procedure is claimed for the so-called extracts of cod liver oil. A readable account of the present state of our knowledge will be found in Sherman, H. C.: Chemistry of Food and Nutrition, New York, the Macmillan Company, 1926.

SKIASCOPY OR RETINOSCOPY

To the Editor:—I should like to submit to your opinion the following point: Bluntly, is the art or practice of skiascopy, also termed retinoscopy, an indispensible step in refraction work; i. e., the fitting of eyeglasses? I heard a specialist of large experience say with finality, "You cannot do refraction until you can do retinoscopy." I have always understood that it is a useful art, an accomplishment, as a preliminary test to determine whether one has a case of myopia or hypermetropia; also that the astigmatism can be determined thereby. However, the authority in question makes a preliminary test and record, as an approximation, in all his cases before resorting to his trial-lenses and reading card. On the other hand, he does not use an ophthalmometer (Javal-Schiötz or others) at all. While the observations by the latter are not absolute as to axis, etc., and the final test until the reading lenses may vary somewhat from it and are the ultimate determination, I was under the impression that it is the most accurate, scientific and speediest method for astigmatism and eliminates the errors of the personal equation of the oculist more than does skiascopy (retinoscopy). Am I all wrong? I should like to know what the opinion of the best authorities and their practice in this matter is. No doubt refraction can be determined by the refraction ophthalmoscope, and also, by skiascopy (retinoscopy) in skilled hands, but they are nowadays not used as ultimates. Is a skiascopic (retinoscopic) determination a "conditio sine qua non" to fitting glasses? Please omit my name.

M.D., Wisconsin.

ANSWER.—The absolute measurement of an error of refraction can be accomplished only when the accommodation of the patient is suspended. This is the "conditio sine qua non," rather than the method whereby the error is measured. The ophthalmometer is useful as an aid, but is far from absolute as long as the patient has a crystalline lens in the eye. In about 90 per cent of the cases, the ophthalmometer yields

approximately true information as to the amount of astigmatism and the axis; but it cannot be told which case falls into the 90 per cent group and which into the 10 per cent group when the astigmatism is lenticular. On the other hand, skiascopy or retinoscopy with a dilated pupil and suspended accommodation yields an absolute measure of the error of refraction present. Retinoscopy without a cycloplegic is so influenced by the accommodation that it does not yield an absolute measure of the refractive error. No ophthalmologist would consider himself properly trained were he not capable of performing an accurate retinoscopy. On the other hand, the prescribing of glasses in adults is seldom done without a postcycloplegic fitting at the trial case, and the art of refraction lies in the judgment used by the oculist in utilizing the knowledge gained by retinoscopy and the postcycloplegic trial case fitting for the purpose of giving the patient the greatest comfort and the best vision. Refraction is not a purely mechanical process.

ANTIDOTE FOR MERCURIAL AND ARSENICAL POISONING

To the Editor:—In the ——— State Board Examination held in October, there is a question the answer of which I have been unable to find in the books on toxicology that are available. I will greatly appreciate knowing where the answer may be found. The question is as follows: "In a case of arsenical poisoning or mercurial poisoning, what is the recognized specific antidote which can be given intravenously?"

V. M. B., M.D.

ANSWER.—There is, of course, no "recognized specific antidote" for arsenic and mercury poisoning that can be used intravenously. Before either of these drugs is absorbed, certain measures, well known to physicians, are used to produce elimination by emesis, lavage, etc.; also, certain antidotal measures, such as the administration of ferric hydroxide (Ferric Hydroxide with Magnesium Oxide, U. S. P.) in the case of arsenic poisoning, may be employed. After absorption, various methods of treatment, which could hardly be called antidotal, much less specific, are resorted to with varying success.

Much propaganda has appeared centering largely in the advertising of a maker of "intravenous specialties," to the effect that sodium thiosulphate intravenously administered is to be favorably regarded as "an antidote for arsenic, bismuth, mercury, and even lead poisoning." In reporting on the product so advertised, the Council on Pharmacy and Chemistry made the following statement (THE JOURNAL, April 25, 1925, p. 1289):

> Its use agaainst metallic poisoning other than arsenical dermatitis is only in an experimental stage: good results in mercury poisoning have been reported; but the uncertain outcome of mercury poisoning under any methods of treatment, and especially the uncertainty as to how much of the poison was removed from the stomach by other chemical antidotes and lavage, makes it difficult to draw definite conclusions. One may not yet feel confident that this treatment of mercury poisoning will have a better fate than so many others that for a time were acclaimed as enthusiastically but which on further experience failed to fulfil the earlier expectations.

The work of Haskell, Henderson and Hamilton (THE JOURNAL, Dec. 5, 1925, p. 1808) is a decided confirmation of the Council's cautionary statement.

FETAL HICCUP

To the Editor:—I have recently had two cases of fetal hiccup. Regarding this condition, DeLee, in his book, says, "The movements are short, quick jerks of the shoulders and trunk, fifteen to thirty a minute, regular, visible, audible and palpable to the observer. They resemble hiccup perfectly except the absence of stridor." In my cases this description is correct except that I was not able to hear anything resembling the sound of a hiccup. I have been talking to some other physicians about that feature and several have remarked that it would be impossible for a sound to be produced because there is no air to be inspired. Could the sound be produced by the closure of the glottis when amniotic fluid would be inspired? Is amniotic fluid normally present in the bronchi? Please omit name.

M.D., New Mexico.

ANSWER.—Fetal hiccup is a not uncommon phenomenon in the unborn baby. If one observes his cases carefully he will detect it without trouble. If it occurs during labor and shortly before delivery, it is not interrupted by the birth of the child but continues afterward for a short time and is changed only by the addition of the audible inspiratory stridor. This last observation proves that the spasmodic motions observed in the child in utero were the "hiccup in utero."

Hiccup is a spasm of the diaphragm and, if the glottis is closed, may occur without making a noise; but the muscle sound of the diaphragm can be heard. Since hiccup is often associated with spasmodic movement of the shoulders and upper part of the trunk, the sound of the body striking the uterine wall can also be perceived.

It is possible for amniotic fluid to be aspirated into the bronchi, although it usually does not arrive there. The larynx often contains a small plug of mucus. In pathologic cases, liquor amnii might be drawn into the lungs and possibly will explain some of the atelectatic babies that are delivered. This point was mentioned by Caldwell of New York a few years ago.

In a case seen by Dr. DeLee, a baby was hiccuping violently during the second stage of labor. It was born rapidly and the hiccup continued with such a loud spasmodic croupy noise that it could be heard in the next room.

MERCUROCHROME-220 SOLUBLE

To the Editor:—In THE JOURNAL, October 23, page 1367, Dr. Hugh H. Young speaks in one instance of a 1 per cent solution of mercurochrome equaling 5 mg. per kilogram, and in another instance mentions it as equaling 5.4 mg. per kilogram. I should like to know just what he really means. How strong a solution should be used? I should also be pleased to have you mention any up-to-date literature on this method of treatment.

HENRY C. HUNTER, M.D., Milford, Utah.

ANSWER.—This letter was referred to Dr. Hugh H. Young, who replies:

"The dosage in the first instance is to be interpreted as follows: 'He was given 34 cc. of a 1 per cent solution of mercurochrome into the veins of the right arm. This dosage is equal to 5 mg. of mercurochrome per kilogram of body weight.'

"In the second instance, it is intended to mean 'after an injection of 27 cc. of a 1 per cent solution intravenously, the temperature rose to 104 and then to 106, and then rapidly fell to normal. The dosage here was equal to 5.4 mg. of mercurochrome per kilogram of body weight.'

"I usually employ a 1 per cent solution, as was stated in these two instances. In fulminating cases I usually try to give a dosage equivalent to 5 mg. per kilogram of body weight, or 23 cc. of a 1 per cent solution per hundred pounds of body weight. For further information, I would suggest that the inquirer refer to my extensive article in the *Archives of Surgery* for May, 1925, and also to another article in the *Archives of Dermatology and Syphilology* for April, 1926."

LACK OF DILATATION OF CERVIX IN LABOR

To the Editor:—I recently saw a maternity case with the following history: The woman was at term, according to her figures. She had been in labor three days and no dilatation of the cervix had occurred. Examination of the abdomen revealed a pregnant uterus, with the child alive. Below and to the left of the uterus, as determined by percussion, was an ovoid that I believed was the bladder. I recommended withdrawing fluid by the normal route, which was done. The woman had been previously catheterized by a nurse and not much urine obtained. I obtained a large amount. The diagnosis of the case was a cervix that would not dilate. I am writing to inquire how a diagnosis of a cervix that will not dilate is made. This was the patient's first pregnancy, and she had had no previous opereation on the cervix. Kindly omit my name.

M.D.

ANSWER.—A full bladder inhibits labor pains through the nervous system; it also interferes mechanically with the contractions of the uterus, and it can, by blocking the inlet, prevent the engagement of the fetal head. Thus, no pressure comes to bear on the nerve ganglions around the cervix, and labor is in abeyance. Furthermore, some women have contractions and appear to be in labor but are not really so, and, finally, lack of dilatation of the cervix may come from either spasmodic (rare) or anatomic rigidity, or from some other anomaly of the cervix.

INJECTION OF TOXIN-ANTITOXIN

To the Editor:—1. How much time should elapse between the typhoid treatment and the toxin-antitoxin treatment? 2. If a child has had three doses of toxin-antitoxin and is then exposed to diphtheria or develops diphtheria, is it safe to give antitoxin? Please discuss this in detail.

P. H. SMITH, M.D., Gaffney, S. C.

ANSWER.—1. There is no definite interval. The second treatment might be properly begun as soon as all disturbances from the first have subsided.

2. Antitoxin should be given if diphtheria develops, *always*. If the affected person has had toxin-antitoxin previously, there may have resulted some hypersensitiveness to horse serum. In such cases the person should be desensitized by giving first a very small dose, and then gradually increasing doses of serum at half hourly intervals up to 1 cc., when the rest of the necessary amount can be given at once.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11-14. Chairman, Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: Los Angeles, Jan. 31 to Feb. 3. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

DELAWARE: Wilmington, Dec. 14-16. Pres., Dr. H. W. Briggs, Wilmington.

DISTRICT OF COLUMBIA: Jan. 11. Sec., Dr. Edgar P. Copeland, Suite 110, 1801 Eye St., N. W. Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. A. L. Davis, 1254 Emma St., Honolulu.

ILLINOIS: Chicago, Jan. 11-13. Supt. of Registration, Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. William T. Gott, Crawfordsville.

MARYLAND: Baltimore, Dec. 14-17. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

NORTH DAKOTA: Grand Forks, Jan. 4-7. Sec., Dr. G. M. Williamson, Grand Forks.

OREGON: Portland, Jan. 4-6. Sec., Dr. M. K. Hall, 816 Pittock Block, Portland.

PENNSYLVANIA: Philadelphia, Jan. 25-29. Mr. C. D. Koch, Director, Professional Education Bureau, Harrisburg.

RHODE ISLAND: Providence, Jan. 6-7. Sec., Dr. B. U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Dr. H. R. Kenaston, Bonesteel.

UTAH: Salt Lake City, Jan. 4-5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

WISCONSIN: Madison, Dec. 18. Board of Examiners in the Basic Sciences. Sec., Dr. M. F. Guyer, Madison. Jan. 11, Regular Board. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse.

Oklahoma September Examination

Dr. J. M. Byrum, secretary of the Oklahoma Board of Medical Examiners, reports the written examination held at Oklahoma City, September 14-15. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Five candidates were examined, all of whom passed. Twelve candidates were licensed by reciprocity, 1 by reregistration, and 1 candidate was granted a duplicate license. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Arkansas Medical Department		(1899)	1
Rush Medical College		(1926)	1
University of Nebraska College of Medicine		(1926)	1
University of Oklahoma School of Medicine		(1926)	1
University of the South Medical Department		(1905)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Chicago		(1904)	Illinois
University of Kansas School of Medicine		(1924), (1925)	Kansas
University of Louisville School of Medicine		(1924)	Kentucky
Tulane University of Louisiana School of Medicine		(1924)	Louisiana
University of Maryland School of Medicine		(1917)	Maryland
University of Michigan Medical School		(1925)	Michigan
Barnes Medical College, St. Louis		(1906)	Missouri
University of Oklahoma School of Medicine		(1923)	Illinois
University of Tennessee College of Medicine		(1925)	Tennessee
Vanderbilt University School of Medicine		(1918)	Tennessee
University of Texas Department of Medicine		(1917)	Texas

Kansas October Examination

Dr. A. S. Ross, secretary of the Kansas Board of Medical Registration and Examination, reports the written examination held at Topeka, Oct. 12, 1926. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Fourteen candidates were examined, all of whom passed. Twelve candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Howard University School of Medicine	(1926)	83.2, 84.4, 86.3,	87.8
University of Illinois College of Medicine		(1926)	89.5
Indiana University School of Medicine		(1926)	89.4
State University of Iowa College of Medicine		(1926) 88.6,	90.1
University of Kansas School of Medicine		(1926)	92
Boston University School of Medicine		(1925)	90
Washington University School of Medicine		(1925) 92.6 (1926)	87.6
University of Pennsylvania School of Medicine		(1926)	89.8
Meharry Medical College		(1926)	88.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas Medical Department		(1926)	Arkansas
College of Medical Evangelists		(1925)	California
University of Illinois College of Medicine		(1922)	Illinois
Northwestern University Medical School		(1918)	Illinois
State University of Iowa College of Medicine		(1924, 2)	Iowa
University of Louisville School of Medicine		(1923)	Kentucky
Creighton University College of Medicine		(1924)	Nebraska
University of Nebraska College of Medicine		(1925, 2)	Nebraska
Vanderbilt University School of Medicine		(1925)	Tennessee
Marquette University School of Medicine		(1926)	Wisconsin

Book Notices

A DOCTOR'S MEMORIES. By Victor C. Vaughan. Cloth. Price, $5. Pp. 464, with illustrations. Indianapolis: Bobbs-Merrill Company, 1926.

Dr. Vaughan has been an outstanding scientific figure and a sturdy original one in medicine for more than forty years. He has had a full and rich experience; he has led a useful life in medicine and he has done another service in giving us these reminiscences of his interesting career. He was reared in rural Missouri. Thence he went to the University of Michigan, where his mature career was worked out. His first great excursion from his professional and academic life was the Spanish-American War. Then stands out his experience in the Great War. These are the high points in his reminiscences, and he has written of all of them in a way that is both interesting and profitable.

He gives a stimulating account of the life of the Middle Border of a family of intelligence and culture and prosperity. They were Southern sympathizers and they went through the hardships that fell to such people in the guerilla warfare in Missouri during the Civil War. They were driven temporarily into Illinois, and he gives some interesting details of rural life in Southern Illinois in the sixties. But the hardships of the war were simply an episode with them, and when it was over they were back in Missouri building up their fortunes again and educating their children.

It was a typical American experience of the Middle Border which complacent urbanites cannot read about too much. The Vaughans and many other people who were working out their fortunes were not ruffians but people of vigorous stock and high ideals, a stock that has contributed more than its share of outstanding men to our population. Vaughan gives a delightful glimpse of this time, a glimpse that is more pleasing because it is without that tone of dissatisfaction that pervades, for example, Hamlin Garland's account.

His collegiate education was obtained in a small college in Missouri, and it is a surprise to find that when he went to the University of Michigan, as he did because it was the school that seemed best to fit his purposes, he was prepared, not to begin his collegiate course, but to enter on postgradute work for a master's degree in chemistry. He got it in a year and followed it in two years more by the degree of doctor of philosophy. Almost from the time of his entering Michigan he became a teacher, first in chemistry, and for more than forty years he continued his active work there. Most of this was academic work, but it also included a wholesome amount of practice.

Of course, most of his reminiscences are given to his long period of service at Ann Arbor. His activities there are well known, but his account will be instructive to all men who are interested in the growth of medicine and of medical education. As a matter of fact, Vaughan led the way in higher medical education in this country, and when the history of medical education is written his work at the University of Michigan will have an important place if justice is done. He did years before at Michigan what Johns Hopkins later undertook. Indeed, Johns Hopkins drew very largely on Michigan for its first and great faculty. His account of his long experience in Michigan is an account in intellectual life in congenial surroundings that any man might envy. It makes instructive reading. His life there was not one of academic isolation but one enriched by constant participation in important activities

in medicine, especially sanitation and toxicology, throughout the United States and in Europe.

His Spanish-American War experience was a real war experience. Probably no man saw more of the war or more of its hardships than did Vaughan. He had a hard field service; he participated in battle; he was responsible for a shipload of desperately ill men brought from Cuba to Long Island and, then, to give variety to the whole, he went through an attack of yellow fever that nearly cost him his life. It was an adventure that he writes of in an interesting way.

A sequel to his Cuban experience was the Typhoid Commission, composed of Vaughan, Shakespeare and Reed. They settled forever the great questions of typhoid transmission. And the way they brought to light the iniquities in sanitation that were allowed to prevail in the Spanish-American War had much to do in developing the importance of the medical corps, so that it was able to do the signal work in sanitation that was so conspicuous in the Great War.

When the Great War came on, Vaughan and his five sons immediately enlisted; one of them was left in France. He went through the war as one of the leaders in medical service, one, unlike most of the civilian leaders, who was able to draw on great experience in military service. Since that he has been engaged in one sort or another of general service to medicine, most of the time as director of the medical division of the National Research Council. Now he is off in China on a commission.

This is a brief outline of Vaughan's life. It is a life that was intelligently planned and well ordered. He has had a proper sense of life's values and has put the highest store on those of intellect and culture. Vaughan writes of it all delightfully. He has a sense of humor and of perspective that saves him absolutely from egotism. He has viewed life with tolerance and wisdom, and he writes of it with that sort of philosophy. The result is a worth-while book.

DIÄTETIK DER MAGEN- UND DARMKRANKHEITEN. Von Prof. Dr. I. Boas. Diätetik und Nachbehandlung bei Operationen am Magen-Darmkanal. Von Prof. Dr. G. Kelling. Second edition. Paper. Price, 12 marks. Pp. 242, with 19 illustrations. Leipsic: Georg Thieme, 1926.

A comparison of this with the preceding edition reveals a few changes and additions hardly sufficient to alter the old volume to any great degree. The book continues to be an excellent guide to the practitioner. A study of the patient is suggested to enable the physician to determine the relation of the diet to work, the particular effect of any food on gastro-intestinal disturbance, the hunger-satisfying power of a restricted diet, and the quality and quantity of the food. Several tables of food values are given. Chronic gastritis is still given considerable space. Hypodermoclysis is accorded space, but transfusion in cases of severe hemorrhage in peptic ulcer is not mentioned. Though he has had little or no experience with duodenal feeding, Boas objects to this procedure because of the risk of instrumentation, and of the possibility of secretion being stimulated by the presence of the tube. The latter reason probably does not obtain. He also emphasizes the possibility of toxic effects arising from the use of alkalis in the Sippy method of ulcer treatment. This also is more or less of a bogy. The chapter on diarrheas, especially the chronic form, is good. Many new references bring the bibliography down to date.

A MANUAL OF PROCTOLOGY. By T. Chittenden Hill, Ph.B., M.D., F.A.C.S., Instructor in Proctology, Harvard Graduate School of Medicine. Second edition. Cloth. Price, $3.50. Pp. 294, with 101 illustrations. Philadelphia: Lea & Febiger, 1926.

Advantage has been taken of the demand for a second edition to rewrite many sections, thus giving a fuller account of the technic; in addition, the whole text has been revised. It is regretted that Whitehead's operation is advised for the ubiquitous hemorrhoid, since less severe interventions frequently suffice. The word "manual" connotes consideration of minor ailments. One may also doubt the advisability of devoting forty-eight of the 285 pages of text to carcinoma, especially as thirty-eight of these forty-eight, again, are reprinted from a journal article by another author. The illustrations are mostly original and helpful, particularly those on technic and on examination of patients.

LA CYSTOGRAPHIE. Etude radiologique de la vessie normale et pathologique. Par H. Blanc et M. Negro, du Service civiale (Hôpital Laribosière, Paris). Préface de G. Marion. Paper. Price, $1.60. Pp. 189, with 108 illustrations. Paris: Masson & Cie, 1926.

This is essentially an atlas depicting normal and pathologic bladder conditions as shown by cystography. Cystography is the roentgenographic study of the bladder when filled with an opaque fluid. There are certain pathologic conditions in which the value of a cystoscopic examination may be materially augmented by cystography. Certain tumors, especially carcinomas which infiltrate the bladder, lend themselves to this type of examination. Diverticula of the bladder can be readily shown with accuracy. Their shape, size and location are determined by this method of examination. Cystoscopy alone seldom permits of complete diagnosis of diverticula, because the cystoscope affords visualization only of the opening and its location. The size and shape of diverticula bear no constant relation to the size of the opening. Bladder reflux is determinable by this method of examination, and dilatations and other abnormalities of the ureters may likewise be diagnosed. The technic of the authors is thorough and beautifully outlined. Exposures are made with the patient resting on a Potter-Bucky diaphragm, and the first exposure is made at a tube distance of 70 cm. from the film with the direct rays focused on a spot two fingerbreadths above the symphysis pubis. The second exposure is termed the anteroposterior axial and is made with the patient also in the supine position. The tube distance is the same as with the previous exposure, but the tube is tilted to an angle of 45 degrees, so that the direct rays are parallel to the axis of the pelvis, and strike the abdomen midway between the umbilicus and the symphysis. The most interesting cystograms are often obtained by cystography in the oblique position. The patient is placed on the Bucky diaphragm in the semilateral position, the plane of the body making an angle of 45 degrees with that of the table. The legs are gently flexed to aid in maintaining this position. The tube distance is the same as for the other positions mentioned. The direct rays fall vertically on a point on the abdomen situated exactly between the anterior superior spine of the ilium and the center of a line drawn between the symphysis and the umbilicus. The patient may be placed first resting on the right side and then on the left. The time of exposure in this position is somewhat longer than in the others. The fourth position is called the oblique axial and is similar to the oblique position except that the tube is tilted 45 degrees, so that the direct rays parallel the axis of the pelvis. They fall obliquely on the same point as in the previous exposure. Lateral cystography is the fifth, and is often of great value especially in determining the size and shape of diverticula. The patient lies on the side with the plane of the body forming an angle of 90 degrees to that of the table. The legs are extended and slightly crossed. The tube distance is 80 cm. above the film. The direct rays fall on a point situated two fingerbreadths in front of the great trochanter. The plates in this book are of the highest type and are an ideal example of what may be accomplished with perfected technic in this field of examination.

CARBOHYDRATE METABOLISM AND INSULIN. By John James Rickard Macleod, F.R.S., M.B., LL.D., Professor of Physiology, University of Toronto, Canada. Cloth. Price, $6. Pp. 357, with illustrations. New York: Longmans, Green & Co., 1926.

Macleod gives, in a relatively small volume, a summary of our present knowledge of carbohydrate metabolism and insulin, a field in which he has done much important work during the last fifteen years. He states in the preface that his aim is to give a comprehensive review of the advances that have been made in our knowledge of the metabolism of the carbohydrates during recent years and more especially since insulin became available. This aim is achieved with brevity and commendable exactness. There is a well selected bibliography at the end of each of the twenty-one chapters. The dramatic development in this field of physiology and medicine in recent years has stimulated an immense amount of clinical and experimental research as well as a crop of monographs on the subject. Among these monographs the present one will hold a leading place. The volume should be in the hands of every internist and biologist.

RADIOTHERAPY IN RELATION TO GENERAL MEDICINE. By Francis Hernaman-Johnson, M.D., Radiologist to the French Hospital, London. Cloth. Price, $1.75. Pp. 211. New York: Oxford University Press, 1926.

Obviously intended for nonradiologic readers, this little volume is strictly a personal book, because it represents the views of the author and not those of any school of radiology, whether British, French or German. While the discussion of some of the subjects is novel and interesting, the work is marred by inaccuracies and misleading statements, such as the assertions that small doses result in stimulating metabolism and in increasing resistance; that tanning of the skin by ultraviolet rays tends to increase the ability of the skin to tolerate stronger doses of roentgen rays, and that roentgen rays can increase the resistance of the body to malignant processes. In the last half of the book the discussion of the various subjects, such as uterine fibromyoma, disorders of the ductless glands, tuberculosis, rickets, anemia, neuralgia, neuritis and syringomyelia, is generally more sound, apparently because it includes many case reports and rests on matters of personal observation.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

YOUR TONSILS AND ADENOIDS. What They Are and How to Take Care of Them. By Martin Ross, M.D., Instructor in Rhinolaryngology, New York Post-Graduate Medical School and Hospital. Cloth. Price, $1.50. Pp. 133, with 3 illustrations. New York: D. Appleton & Company, 1926.

To be read after they are out, leaving it to the physician to make the decision.

LIGHT TREATMENT IN SURGERY. By Dr. O. Bernhard. Translated from the second German edition by R. King Brown, B.A., M.D., D.P.H., Medical Officer of Health, Bermondsey. Cloth. Price, $7.50. Pp. 317, with 105 illustrations. New York: Longmans, Green and Company, Ltd., 1926.

Sunlight—natural and artificial—for wounds and for surgical tuberculosis.

DISEASES OF THE TEETH. Their Diagnosis and Treatment. By John Albert Marshall, D.D.S., Ph.D., Professor of Dental Pathology and Biochemistry, University of California. Cloth. Price, $4.50. Pp. 331, with 114 illustrations. Philadelphia: Lea & Febiger, 1926.

Scientific consideration of dental pathology and modern methods of treatment.

ANATOMISCHE GRUNDLAGEN WICHTIGER KRANKHEITEN. Ein Lehrbuch für Ärzte und Studierende. Von Dr. Leonhard Jores, o. ö. Professor der allgem. Pathologie und patholog. Anatomie an der Universität Kiel. Second edition. Paper. Price, 48 marks. Pp. 525, with 365 illustrations. Berlin: Julius Springer, 1926.

New edition of a practical textbook of pathology.

HANDBUCH DER MASSAGE UND HEILGYMNASTIK. Von Dr. Med. Franz Kirchberg, Lektor für Massage und Heilgymnastik an der Universität Berlin. Band II. Massage und Gymnastik bei Erkrankungen der einzelnen Organsysteme. Paper. Price, 15 marks. Pp. 334, with 23 illustrations. Leipsic: Georg Thieme, 1926.

Massage and gymnastics in systemic disorders.

ALCOHOL AND LONGEVITY. By Raymond Pearl, Institute for Biological Research, The Johns Hopkins University. Cloth. Price, $3.50. Pp. 273. New York: Alfred A. Knopf, 1926.

Showing that only the abuse and not the moderate use of alcohol abbreviates longevity.

CANCER DE L'ŒSOPHAGE. Par L. Bérard and A. Sargnon, clinique chirurgicale de la Faculté de Médecine de Lyon. Paper. Price, 77 fr. Pp. 448, with 76 illustrations. Paris: Octave Doin, 1926.

Monograph with insufficient regard for American advancement.

THE FINANCING OF SOCIAL WORK. By Arthur W. Procter and Arthur A. Schuck, Assistant National Field Director, Boy Scouts of America. With a Foreword b, Mortimer L. Schiff. Leather. Price, $4. Pp. 260, with illustrations. Chicago: A. W. Shaw Company, 1926.

How professional collectors get your money and theirs.

A HANDBOOK OF RENAL SURGERY. By F. McG. Loughnane, F.R.C.S., Hon. Surgeon, St. Mary's Hospital, Plaistow. Cloth. Price, $3.75. Pp. 210, with 46 illustrations. New York: Longmans, Green and Company, Ltd., 1926.

Well printed monograph on a difficult surgical technic.

TRAITÉ DES MALADIES DE LA PROSTATE. Par Georges Luys. Prostatectomies et tumeurs malignes. Par Victor Pauchet, chirurgien de l'Hôpital Saint-Michel. Paper. Price, 90 fr. Pp. 680, with 462 illustrations. Paris: Octave Doin, 1926.

All that any one could know about the prostate.

PROHIBITION AT ITS WORST. By Irving Fisher, Professor of Economics, Yale University. Cloth. Price, $1.75. Pp. 255, New York: Macmillan Company, 1926.

A teetotaler's arguments for more teetotalism based on the amount thus far achieved.

PROPEDEUTICA OBSTETRICA. Por Arnaldo de Moraes, livre-docente de clinica obstetrica (por concurso) da Faculdade de Medicina da Universidade do Rio de Janeiro. Second edition. Paper. Pp. 444, with 127 illustrations. Rio de Janeiro: Livraria Francisco Alves, 1926.

Poorly printed textbook of obstetrics.

THE BASIS OF LIGHT IN THERAPY. By Herman Goodman, B.S., M.D. Cloth. Price, $3.50. Pp. 163, with illustrations. New York: Medical Lay Press, 1926.

The basic facts of physical therapy revealed conservatively.

LA TUBERCULOSE PULMONAIRE LATENTE. Prétuberculose. Sommets suspects. Par J. Rieux, médecin-inspecteur de l'armée. Paper. Price, 36 fr. Pp. 247, with 12 illustrations. Paris: Octave Doin, 1926.

The detection of slightly concealed tuberculosis.

L'ENFANT ISSU DE PARENTS TUBERCULEUX. Étude critique de l'hérédité tuberculeuse. Par le Docteur Marcel Lelong. Paper. Pp. 232. Laon: Imprimerie de L'Aisne, 1925.

Hereditary influences in tuberculosis.

THE BOARD OF PUBLIC EDUCATION, SCHOOL DISTRICT OF PHILADELPHIA. Division of Medical Inspection of Public Schools. Report for the year ending June 30, 1925. Submitted to The Board of Public Education by the Director of Public Health. Paper. Pp. 75, with illustrations. Philadelphia, 1926.

AUSGEWÄHLTE CHIRURGISCH-KLINISCHE KRANKHEITSBILDER NACH SAUERBRUCH'S KLINISCHEN VORLESUNGEN. Erstes Heft. Von Prof. Dr. Georg Schmidt, Oberarzt der chirurgischen Universitätsklinik München. Paper. Price, 2,70 marks. Pp. 84. Berlin: Julius Springer, 1926.

SCIENTIFIC REPORTS FROM THE GOVERNMENT INSTITUTE FOR INFECTIOUS DISEASES for the Year 1925, Volume IV. Edited by Dr. Yoneji Miyagawa. The Tokyo Imperial University. Director: Prof. Mataro Nagayo. Paper. Pp. 493, with illustrations. Tokyo, 1925.

COPROLOGIE MICROSCOPIQUE. Par M. Langeron, chef de laboratoire à la Faculté de Médecine de Paris, et M. Rondeau du Noyer, préparateur à la Faculté de Médecine de Paris. Paper. Price, 48 cents. Pp. 132, with 129 illustrations. Paris: Masson et Cie, 1926.

PRÉCIS D'ANATOMIE PATHOLOGIQUE. Par le Docteurs G. Herrmann, et C. Morel, professeur à la Faculté de Médecine de Toulouse. Second edition revised by Dr. C. Morel. Cloth. Price, 55 fr. Pp. 809, with 350 illustrations. Paris: Octave Doin, 1926.

LA SYPHILIS NERVEUSE: Etiologie.—Pathogénie.—Prophylaxie.—Traitement. Études cliniques et biologiques. Par A. Sézary, médecin de l'hôpital Broca. Paper. Price, 80 cents. Pp. 208, with illustrations. Paris: Masson et Cie, 1926.

ÉTUDES SUR LES AFFECTIONS DE LA COLONNE VERTÉBRALE. Par André Leri, professeur agrégé à la Faculté de Médecine de Paris. Paper. Price, $1.80. Pp. 526, with 115 illustrations. Paris: Masson et Cie, 1926.

ON THE STATE OF THE PUBLIC HEALTH. Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1925. Paper. Price, 3s, net. Pp. 240. London: His Majesty's Stationery Office, 1926.

L'ARTHROPLASTIE DU GENOU. Par Dr. Charles-Henri Chevallier, aide d'anatomie à la Faculté de Médecine. Paper. Price, 48 cents. Pp. 152, with 7 illustrations. Paris: Masson et Cie, 1926.

LA INFECCIÓN ES UN DELITO. Por el Dr. José Azurdia, de las Facultades de Madrid y Guatemala. Paper. Pp. 32. Guatemala, Sanchez & de Guise.

LA MORTALIDAD INFANTIL EN GUATEMALÁ. Por el Dr. José Azurdia, de las Facultades de Madrid y Guatemala. Paper. Pp. 17. Guatemala: Sanchez & de Guise.

THE NATIONAL COUNCIL FOR THE UNMARRIED MOTHER AND HER CHILD. Eighth Annual Report, 1926. Paper. Price, sixpence. Pp. 25. London, 1926.

Medicolegal

Duty and Liability in Filling of Prescriptions

(McGahey v. Albritton (Ala.), 107 So. R. 751)

The Supreme Court of Alabama says that it appeared from the complaint that the plaintiff secured for her child a prescription from a physician, which she sent to the defendant druggist to be filled. A clerk of the defendant's filled the prescription by placing in it calomel, which was not called for by the prescription, and which was injurious to the child in its condition. It was the duty of the druggist to fill the prescription, after he undertook to do so, with care and with that degree of diligence and prudence which was commensurate with the danger involved. The complaint averred that duty and showed a breach thereof and that as a consequence the child was made sick and continued sick from it for weeks, and that the plaintiff was caused thereby to spend her time nursing the child, had to employ a physician to attend it, and incurred the expense of drug bills for it. If true that the sickness of the child was proximately caused by the negligent act of the defendant through his clerk while in the course of his employment, the defendant was liable to the plaintiff for the reasonable amounts necessarily expended or incurred by her in and about the treatment and care of her child, and for the value of her services while nursing it during this sickness. The child resided with the plaintiff, who was its mother; and, its father having deserted them, when the child became sick it was the duty of its mother, the plaintiff, to nurse or employ a nurse for it, to secure at her expense a physician to attend it, and to purchase necessary drugs for it. However, the evidence was in striking conflict as to whether the prescription as filled by the defendant contained calomel. There was evidence that it contained calomel, and there was some slight testimony tending to show that this calomel was the cause of the continued illness of the child, and there was much evidence to the contrary. But when there is the slightest evidence tending to prove that the plaintiff has a right to recover, an affirmative charge for the defendant should be refused. The jury assessed the damages of the plaintiff at $175, and judgment for that amount is affirmed, as not being excessive.

Competent Evidence Against Abortionist

(State v. Doty (Minn.), 208 N. W. R. 760)

The Supreme Court of Minnesota, in affirming a judgment of conviction of the defendant of manslaughter in the first degree in performing an abortion, says that the evidence of the physicians justified the finding, necessarily included in the verdict, that there was an induced abortion, not necessary to save the woman's life. There were received in evidence statements made by the woman to her husband to the general effect that she was going to the defendant to procure an abortion, and that he was giving her treatment to produce the result desired, made before the treatment was at an end. Such evidence was competent. In other words, it was not error to receive in evidence statements to her husband of a woman, on whom it was charged that an abortion had been performed, as to her treatment by the defendant, during its progress.

Then there was evidence of two other abortions performed about the same time. Such evidence is competent in this class of cases for the purpose of showing a willingness and readiness, or a guilty or criminal intent. But such evidence is to be restricted to the limited purpose for which it is received. It is to be distinguished from evidence objectionable as proving merely other crimes. The danger of it is that a jury may convict because, though guilt of the crime charged is not proved, it is satisfied to convict because of other crimes. However, in this case the trial court carefully cautioned the jury as to the purpose of the testimony and how it should be considered.

It was contended that there was error in receiving the testimony of physicians giving their opinions as experts that an abortion had been produced, because it was based in part on the testimony of the husband as to statements of his wife such as are mentioned above. The husband testified as to the condition of his wife and her sickness and suffering during the treatment. Some of the physicians were present when his testimony was given, had assisted at the necropsy, or had been present at it. They were asked to give opinions based on such testimony and the information acquired at the necropsy. The objection was that they were permitted to base their opinions on the hearsay statements of the wife, competent for a limited purpose only. But this court does not so construe the record. The evident purpose was to get the physicians' testimony, based on their knowledge obtained at the necropsy and the husband's testimony of her physical condition during the treatment, and not to get their judgment of the defendant's guilt or innocence; and this was proper. That is to say, the contention that physicians, called, as experts, were allowed to base their opinions on hearsay statements made by the woman to her husband was not sustained by the record, according to the syllabus by the court.

Not Emergency, Prayer, or Assistant's Treatment

(People v. Cosper (Calif.), 245 Pac. R. 466)

The District Court of Appeal of California, first district, division 2, in affirming a judgment of conviction of the defendant, says that he was charged with a violation of section 17 of the medical practice act, proscribing the wilful practice of any system or mode of treating the sick and afflicted by one who does not hold a valid certificate therefor. It was in evidence that he was the organizer and a member of a corporation known as the Christian Philosophical Institute, which was organized for the purpose of teaching students to treat by prayer the sick and afflicted. In August, 1924, arrangements were made by him to treat a woman during the period of her confinement, it being agreed that he should treat her without fee and that he might bring to her home a number of his students for the purpose of giving them instruction in the treatment of cases of that character. At 5 o'clock on the morning of the 28th, he and his students gathered at the home of the patient, and immediately after that he made a physical examination of the patient and gave her instructions as to the character of exercises which she should perform in order to aid the birth of her child. During this time his students were engaged with him in going through certain exercises which were a part of the method of treatment taught by the institute, and during the period between the time of labor the students retired to the dining room and either engaged in silent prayer or in dancing and other forms of amusement. This treatment continued until 2 o'clock of the following morning, when the patient and her husband insisted on having medical treatment, and she was removed to a maternity hospital. But at about 7 a. m. of the 28th, a licensed osteopath came on the call of the defendant and remained with the patient for several hours, during which time the defendant worked with him in the manipulation of the body of the patient. It was conceded that the defendant did not at any of the times referred to have a certificate entitling him to practice any system or mode of treating the sick or afflicted in the state. The evidence recited, without going into further detail, was sufficient to support the charge in the information of a violation of section 17 of the medical practice act.

It was urged on the part of the defendant that the case was an emergency treatment, coming within the exception in section 22, that "nothing in this act shall be construed to prohibit service in case of emergency." But the suggestion of an emergency in this particular case was refuted by the uncontroverted evidence that arrangements had been made for the treatment by the defendant of this particular patient several days before the date he was called, and from the further fact that approximately twenty hours elapsed between the time when he commenced his treatment and the time of the birth of the child. During that time ample opportunity was afforded to secure a regularly licensed physician.

It was also urged that the defendant was entitled to relief from the exception contained in section 22 of the medical practice act, to the effect that the provisions of the act shall

not "prohibit or apply to any kind of treatment by prayer." However, an examination of the record in this case showed without the slightest doubt that the use of prayer by the defendant in the treatment of his patient in this case was a mere subterfuge to escape the prohibitory provisions of the medical act. Nor does this court agree with the defendant's suggestion that the trial court erred in refusing to give his proposed instructions relating to the employment of an assistant under a duly licensed practitioner and to the question of emergency treatments. As has been seen, these issues were not before the jury, because the uncontroverted evidence was that the defendant was the actor and not an assistant in the treatment rendered, and that there were no circumstances under which the question of an emergency could arise.

Nonexpert Saying Injuries Necessitated an Operation

(Northern Texas Traction Co. v. Gilbert (Texas), 282 S. W. R. 850)

The Court of Civil Appeals of Texas, in reversing a judgment obtained by plaintiff Gilbert for damages for injuries, says that, in view of another trial, the testimony of the plaintiff to the effect that her injuries were such as to necessitate an operation should be excluded on objection. She was not an expert, and the court thinks that it would be for the jury to say from the proof of the injuries shown and the testimony of physicians who operated on her whether or not the operation was a necessary one.

Sales of Small Quantities of Narcotics—Law in Doubt

(Teter v. United States (U. S.), 12 Fed. R. (2d) 224)

The United States Circuit Court of Appeals, seventh circuit, in affirming a judgment of conviction of defendant Teter, says that the defendant was convicted on the first three counts of an indictment; the first charging the sale of nine quarter-grain tablets of morphine to Emma Ferguson, October 13; the second, a similar sale to her, October 30; and the third, a sale to her of sixteen of such tablets, October 31, all in 1924. On a fourth count, charging him with being a dealer in opium, he was acquitted. The court imposed a penalty of three years' imprisonment and $500 fine. Evidence was adduced to show that the defendant was a practicing physician, and that the witness Ferguson was a drug addict who called at his office saying to him that she was an addict and had been informed that she might get the drug of him, asking him to sell her some, which he did.

It was earnestly contended for the defendant that the case was controlled by the opinion of the Supreme Court of the United States in *Linder* v. *United States*, 268 U. S. 5, 45 Sup. Ct. 446. Although the indictment there under consideration was criticized, it was not distinctly held that it failed to state an offense in charging the selling of so small a quantity of narcotics as one tablet of morphine and three tablets of cocaine. The indictment there charged that the defendant was a physician; this one did not state that the defendant was a physician. This one charged the sale of a considerably larger quantity of the drugs, to wit: count 1, nine quarter grains; count 3, sixteen quarter grains. The criticism of the court there was directed not so much to the indictment as to the court's charge to the jury, which was in effect that a physician may not give to a known addict a small quantity of drugs for self-administration "for the sole purpose in good faith of relieving conditions incident to addiction and keeping herself comfortable."

In the case at bar, while the quantity shown to have been sold was not large, nevertheless there was evidence tending to indicate that the sales were not in good faith from a physician's standpoint, and were for no other purpose than to enable this addict to further indulge her unfortunate propensities. The defendant was not treating her, but he testified he would treat her as soon as she raised $125 to pay in advance for the treatment, and that she agreed to do this. If his testimony alone were to be considered, the case might fall within the strictures in the Linder opinion. But, as indicated, the complaining witness testified that she did not go there for treatment, but merely stated that she was an addict and wanted the drugs; that the defendant did not examine her, but gave her the drugs for which she paid on three occasions. She explained that on one occasion the reason why so small an amount was given her was that he stated his supply was low, but that he would then give her as much as he could spare. To the officer who arrested him he said he had no record showing the names of those to whom he dispensed narcotics, and he produced from his vest pocket a bottle which contained sixty-seven quarter-grain morphine tablets. Notwithstanding two other physicians testified that in the treatment of addicts it was not improper to give them doses such as appeared to have been given to the complaining witness, this court is satisfied that under all the circumstances it was for the jury to say whether or not these sales of drugs to the complaining witness were in good faith, or were solely for the purpose of pandering to the habit of a drug addict, and selling the drug.

On oral argument, counsel for the defendant urged the unconstitutionality of the antinarcotic act, prompted no doubt by the opinion handed down a few days before in *United States* v. *Daugherty*, 46 Sup. Ct. 156 (Jan. 4, 1926), wherein the supreme court said:

> The constitutionality of the antinarcotic act, touching which this court so sharply divided in *United States* v. *Doremus*, 249 U. S. 86, 39 Sup. Ct. 214, was not raised below, and has not been again considered. The doctrine approved in *Hammer* v. *Dagenhart*, 247 U. S. 251, 38 Sup. Ct. 529, *Child Labor Tax Case*, 259 U. S. 20, 42 Sup. Ct. 449, *Hill* v. *Wallace*, 259 U. S. 44, 42 Sup. Ct. 453, and *Linder* v. *United States*, 268 U. S. 5, 45 Sup. Ct. 446, may necessitate a review of that question, if hereafter properly presented.

While this apparent challenge seemed to invite raising of the constitutional question, this court (of appeals) is not at liberty to consider it, but is bound to follow *United States* v. *Doremus* and accept the conclusion of its constitutionality there reached, albeit by a "sharply divided" court.

Refusal for Ethical Reasons to Perform Appendectomy

(St. Louis Southwestern R. Co. v. Webb (Ark.), 282 S. W. R. 966)

The Supreme Court of Arkansas, in affirming a judgment for damages in favor of the plaintiff, Mrs. Webb, says that her son, who was 18 years old and had been employed by the railway company to carry the mail between one of its stations and the post office, suffered an acute attack of appendicitis. The plaintiff sought to have him sent to the railway company's hospital, which it operated as trustee, and, on being told that he was not entitled to the service of the hospital, had an arrangement made for an ambulance from another hospital in the same city to meet the train and for a surgeon to operate on him as soon as he had been received at the hospital. When the plaintiff, with her son, reached the city, shortly after 2 p. m., she again sought to have her son admitted to the company hospital, which resulted, after a start had been made for the other hospital, in the patient's being taken to the company hospital, on the plaintiff's promise to pay the hospital bill if it was finally definitely determined that he was not entitled to this service. At the company hospital it was seen that an operation was imperative and immediately required, and preparations were made for it, when the plaintiff stated, in the discussion which arose as to whether her son was entitled to service as a railroad employee, that she had brought him to that city to be operated on by a surgeon at the other hospital.

On receiving this information, the surgeons at the company hospital declined to operate, one of them calling up on the telephone the surgeon at the other hospital, telling him that they were about to "swipe" one of his patients through ignorance of the fact that he was his patient. That surgeon told them to go ahead with the operation, but they declined to do so, and the patient was again placed in the ambulance and carried over streets which were not in good condition for a distance of a mile or more to the other hospital, where he arrived at about 6 p. m., and the operation was performed between 6:30 and 7 p. m. The surgeon there testified that he hesitated about performing the operation, for the reason that he thought it was too late to be successful, and that when he did perform it he found that the appendix had burst. He advised the plaintiff, immediately after the operation, that her son could not live; and the patient died the next morning.

The court thinks that the testimony was sufficient to support the finding that the refusal of the surgeons at the company hospital to operate was based on a question of professional ethics involved after discovering that the patient had been brought to their city to be operated on by the other surgeon. The cause was submitted to the jury under instructions which submitted the questions: (*a*) Did the railway company, through its duly authorized agents, agree, in an emergency, to take the patient to the hospital and operate? (*b*) Should he have been operated on at once? (*c*) Did the company refuse this operation? (*d*) Did this refusal increase the patient's suffering and lessen his chances of recovery? The jury must have found all these issues in favor of the plaintiff before returning a verdict in her favor. On the finding of these issues of fact in the plaintiff's favor, this court thinks that a case was made for the jury. The authorities having in charge the hospital, and who were necessarily acting as agents for the railway company as trustee of the hospital, assumed charge of the patient in a known emergency, and it then became the duty of the hospital authorities to administer the treatment which the emergency of the case required. The occasion was not one for hair-splitting ethical questions.

There was a humanitarian doctrine involved here. The patient was carried to the hospital, where the operation could have been performed. The theory of the plaintiff's case was, not that there was any negligence in the treatment given the patient, but that there was a withholding of treatment which was never rendered, and nothing was done, except to send the patient to another hospital, and this only after a delay of several hours.

The railway company was under no duty to the patient, yet the care and control of the patient was assumed and after assuming it the hospital authorities failed and declined to discharge the obligation they had assumed, and this failure and refusal were made by physicians acting in their capacity as managers of the hospital. Under these circumstances, there was a question for the jury.

Testimony—Not Basing Opinion on Opinion—Credibility

(Carlson v. Kansas City, Clay County & St. Joseph Auto Transit Co. (Mo.), 282 S. W. R. 1037)

The Kansas City (Mo.) Court of Appeals, in affirming a judgment for damages in favor of the plaintiff, who was injured while a passenger in one of the defendant's busses, says that it was contended that the trial court erred in allowing the plaintiff's physician to change his testimony as to cuts over the plaintiff's breast affecting the pectoralis major muscle. He did not see the plaintiff until several days after her injuries were received. He testified that the muscle evidently had been cut; that in his opinion it had been cut. He was then asked whether, if the muscle was cut, it was his opinion that it would affect or limit the movement of the arm. An objection was made, whereupon he stated that he could testify only as to his opinion on the matter of its being cut, and the trial court ruled that the physician could not base an opinion on an opinion. Again, after he had testified that from his examination the movement of the arm had been weakened, and he was asked how the cutting of the muscle would weaken the arm, the trial court refused to permit him to answer this, unless he would testify as a fact that the muscle had been cut. Thereupon the physician was asked if as a matter of fact the muscle had been divided or cut, and he was permitted to say that it had been.

The physician was not testifying as an expert witness. No hypothetic questions were propounded to him. He was testifying from information which he had obtained from an examination and treatment of the plaintiff. It was questionable whether he was basing an opinion on an opinion when the court sustained the first objection. However, to an untrained legal mind, at least, there is not a great deal of difference between a statement of an opinion and a statement of a fact or condition based on an examination. The difference, if any, between a statement of an opinion and a statement of the existence of a fact or condition, where the physician has made an examination of the patient, is so slight, if there is any difference whatever, that the court could hardly be convicted of error in permitting the physician to state what he found as a fact. This is so even though it be the law that a witness may not change his testimony on the witness stand, and this is by no means to be conceded.

Another physician examined the plaintiff a short time before the trial. He described the cuts as disclosed by the scars and the nature and extent of the scars. He testified that the scar on the plaintiff's breast ran downward and backward crosswise to the muscle fiber; that there was a slight depression at that point, and that the way he brought about the depression was to put the muscles "so" and have the plaintiff blow out, then pushed in with his fingers and found the depression, "so that the muscle fiber, some of them had been cut." This was not an expression of an opinion, but testimony as to a fact. The physician afterward testified that his physical examination of the plaintiff disclosed that the strength of the arm was reduced by reason of the cutting into the muscle, but the movement did not seem to be impaired. That this physician could not see the depth of the cut at the time he made an examination of the plaintiff, and could not see that the muscles had been cut, did not disqualify him from stating that it had been cut, based on the test he made in connection with a depression at the scar. However, in no event could it be said that he was permitted to violate the rule against basing an opinion on an opinion.

The court of appeals says further that if a witness was the defendant's physician, or if he was called by the defendant a sufficient number of times to give rise to an inference of friendliness between him and the defendant, the jury was entitled to know it; and if he was the regular surgeon for an interurban line, and the defendant was a part of that concern, the jury was entitled to know this. It is always competent to show the connection of a witness with a party to the cause to test the former's credibility.

"Proximate Cause" of Injury

(Brady v. Oregon Lumber Co. et al. (Ore.), 245 Pac. R. 732)

The Supreme Court of Oregon, in denying the plaintiff's petition for a rehearing in this action to recover damages for personal injuries, says that, in the contention that the failure of the defendant company to run its train to the logging camp on Saturday was the proximate cause of the plaintiff's injury on Monday night thereafter, counsel overlooked the rule that the "proximate cause" is the dominant cause from which the injury follows as a direct and immediate consequence. It is the immediate, and not the remote, cause that is regarded. And, in applying the law to the facts, that damage which does not flow proximately from the act complained of is rejected. If an injury has resulted from a certain wrongful act or omission, but only through some intervening cause, from which last cause the injury followed as a direct and immediate result, the law will refer the damage to the last or proximate cause and refuse to trace it to the more remote. Moreover, if common experience does not show the wrong and the resulting damage to be naturally in sequence, and the damage does not in the ordinary course of events follow from the wrong, then the wrong and the damage are not sufficiently conjoined or concatenated as cause and effect to support an action. Though much has been written concerning the "proximate cause" of an injury, there has been adduced no certain rule by the application of which it is possible to draw nice distinctions between a proximate and a remote cause. The proximate cause of an injury is ordinarily a question of fact to be determined by the jury.

Society Proceedings

COMING MEETINGS

Isthmian Canal Zone, Medical Association of, Ancon, Dec. 21. Dr. Lawrence Getz, Hospital Santo Tomas, Panama City, Panama Canal Zone, Secretary.

Philippine Islands Medical Association, Manila, Dec. 14-17. Dr. I. Concepcion, College of Medicine and Surgery, Manila, P. I., Secretary.

Society of American Bacteriologists, Philadelphia, Dec. 28-30. Dr. James M. Sherman, Cornell University, Ithaca, New York, Secretary.

Southern Surgical Association, Biloxi, Miss., Dec. 14-16. Dr. R. L. Payne, Medical Arts Building, Norfolk, Va., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

32: 483-640 (Oct.) 1926

*Value of Elementary Phosphorus in Rickets. A. F. Hess and M. Weinstock, New York.—p. 483.
*Topography of Interlobar Pleurisy in Infants by Lipiodol Injection. P. F. Armand-Delille, Paris.—p. 497.
*Pulmonary Actinomycosis. J. C. Gittings and E. S. Thorpe, Philadelphia.—p. 501.
*Pyuria in Malformations of Urinary Tract. I. A. Abt, Chicago.—p. 507.
Basal Metabolism and Specific Dynamic Action of Foods in Children in Various Conditions of Nutrition. A. F. Morgan and G. D. Hatfield, Berkeley, Calif.—p. 516.
*Fruit and Vegetable Juices Used in Infant Feeding. E. M. Davis and H. A. Stillman, Columbia, Mo.—p. 524.
*Uric Acid in Urine of Infants: II. Day and Night Excretion. O. S. Rougichitch, New York.—p. 530.
*Incidence of Endocarditis in Earliest Childhood. P. D. White, Boston.—p. 536.
*Calcium Balance with Hydrochloric Acid Milk. R. G. Flood, San Francisco.—p. 550.
Growth Standards for Private School Boys. H. Gray, Santa Barbara, Calif., and F. Fraley, Philadelphia.—p. 554.
Biologic Therapy in Prophylaxis and Treatment of Scarlet Fever. J. A. Kolmer, Philadelphia.—p. 556.

Value of Elementary Phosphorus in Rickets.—Hess and Weinstock state that elementary phosphorus, whether given in small or in large doses, was unable to prevent the occurrence of rickets to any degree whatever. Even when the diet was only slightly rachitogenic, the addition of phosphorus did not protect against rickets. Furthermore, combining phosphorus with an inadequate amount of cod liver oil failed to render the oil adequate. These failures in protective action were noted on diets low in phosphorus as well as on a diet low in calcium. A marked increase in calcification of the long bones (subepiphyseal band) took place concurrently with the development of typical rachitic lesions. That this is the case indicates that rickets must be regarded not as the result of a failure of calcification but as a disorder characterized by specific changes in the preparatory cartilage and in the growing bone. Elementary phosphorus fails because it is unable to bring about calcification within this cartilage or to prevent the undue formation of osteoid tissue.

Topography of Interlobar Pleurisy in Infants by Injection of Iodized Oil.—Armand-Delille states that not only is the procedure harmless, but a definite improvement followed its use, in both the temperature curve and the weight. It may be used even after the formation of a bronchopleural fistula, since the tract of the fistula is, in general, too small to allow the penetration of iodized oil, and its evacuation by the bronchial route.

Pulmonary Actinomycosis.—A case of primary pulmonary actinomycosis occurring in a child, aged 5 years, is presented by Gittings and Thorpe. Factors relating to the mode of infection in this case are not known, but transmission from a cat is suggested.

Pyuria in Urinary Tract Malformations.—Abt urges that every child with protracted pyuria which fails to respond to the usual methods of treatment within a reasonable time should be subjected to cystoscopic and roentgen-ray examination by a urologist.

Orange and Tomato Juice in Infant Feeding.—The minimum amount of orange or tomato juice which would support normal growth in the rat was found by Davis and Stillman to be 9 cc. The same quantity of spinach or carrot juice gave equally good results. Nine cubic centimeters of winter cabbage did not support growth, but during a short experiment in which fresh summer cabbage was used, it was seen to be comparable in growth promoting power to the other juices used.

Uric Acid in Infants' Urine.—The primary uric acid three hour diurnal and nocturnal excretion in five healthy infants was studied by Rougichitch. Three infants showed considerable irregularity in the uric acid found in the separate samples, probably because of overlapping of periods. Two infants showed a remarkable uniformity in the rate of excretion in successive three hour periods. The total diurnal output of uric acid was strikingly similar to the total nocturnal excretion in all five cases.

Incidence of Endocarditis in Childhood.—A study of the literature and of cases has convinced White that endocarditis in infancy is rare, but even during the first year of life it may occur, and when it does it appears to be more often associated with infection of "septic" nature rather than with rheumatic infection. Endocarditis after the age of 2 years becomes more common, and is much more likely to be associated with rheumatic rather than with septic infections as the child grows older. Many cases of endocarditis in early childhood are of unknown cause, and doubtless account for much of the chronic valvular disease of obscure etiology found in older children at school age and after, and in young adults. It is probable that the largest percentage of these doubtful cases results from unrecognized rheumatic infection, often very mild, and sometimes affecting the heart alone. It is possible that some of the doubtful cases may result from septic infection in infancy or afterward.

Calcium Balance with Hydrochloric Acid Milk.—It is evident from Flood's researches that hydrochloric acid milk favors the absorption of calcium in the rachitic infant but has little effect on the calcium retention of the normal baby. Hydrochloric acid milk has some prophylactic action against rickets during the first year, as it insures a high constant calcium absorption during this time.

American Journal of Ophthalmology, Chicago

9: 725-800 (Oct.) 1926

Sclerosis of Central Artery of Retina. C. R. Bridgett, Philadelphia.—p. 725.
Osteosarcoma of Orbit, with Surgical Complications. W. Zentmayer, Philadelphia.—p. 736.
Choroidal Sarcomata. B. Chance, Philadelphia.—p. 738.
Unlearnable Prism Test for Suspected Monocular Malingering. E. H. Schild, Canton, Ohio.—p. 741.
Ptosis Spectacles. J. M. Ball, St. Louis.—p. 743.
Experimental and Curative Application of Pepsin in Eye Disease. F. Naróg, Lwów, Poland.—p. 746.
Ocular Muscles: Splice Operation for Shortening. F. W. Dean, Council Bluffs, Iowa.—p. 751.
Trial Case Bifocal Lenses. J. M. Griscom, Philadelphia.—p. 752.
Pigmentation of Roots of Cilia. F. B. Blackmar, Columbus, Ga.—p. 753.

American Journal of Physiology, Baltimore

78: 235-493 (Oct. 1) 1926

*Effects of Parathyroid Extract on Heart and Circulation. D. J. Edwards and I. H. Page, New York.—p. 235.
Oestrous Cycle in Rat: III. Effect of Low Environmental Temperatures. M. O. Lee, Columbus, Ohio.—p. 246.
Monosegmental Versus Plurisegmental Innervation of Gastrocnemius and Peroneus Muscles of Frog. M. Boyd, Cambridge, Mass.—p. 254.
*Physiology of Liver: XV. Effect of Total Removal on Deaminization. J. L. Bollman, F. C. Mann and T. B. Magath, Rochester, Minn.—p. 258.
*Blood Sugar and Urinary Dextrose-Nitrogen Ratio Following Pancreatectomy. W. H. Chambers and P. N. Coryllos, New York.—p. 270.
*Effect of Cutting on Rate of Hair Growth. R. J. Seymour, Columbus, Ohio.—p. 281.
*Movements of Large Intestine in Guinea-Pig. G. C. Currie and V. E. Henderson, Toronto.—p. 287.
*Seasonal Variation in Urinary Excretion of Total Phenols. H. G. O. Holck, Chicago.—p. 299.
*Relation Between Cardiac Reactions to Drugs and C_H of Blood: I. Caffeine. W. Salant and J. E. Nadler, Augusta, Ga.—p. 308.
Fasting and Rice Disease in Pigeons; Parallelism of Loss of Body Weight, Temperature and Respiration Rate: No B Vitamin in Cortex of Beef Suprarenal. O. W. Barlow, Cleveland.—p. 322.
*Physiology of Pancreas: II. Proof of Humoral Mechanism for External Pancreatic Secretion. J. I. Farrell and A. C. Ivy, Chicago.—p. 325.
*Emptying of Gallbladder. G. M. Higgins and F. C. Mann, Rochester, Minn.—p. 339.
Effect of Ligation of Hepatic Artery on Carbohydrate Metabolism. W. S. Collens, D. H. Shelling and C. S. Byron, New York.—p. 349.
Pupillary Reaction in Tetrapods: II. Effect of Pilocarpine and Other Drugs. T. Koppányi and K. H. Sun, Chicago.—p. 358.

Id.: III. Reactions of Avian Iris. T. Koppányi and K. H. Sun, Chicago.—p. 364.
Direct and Indirect Determinations of Uric Acid in Human Blood. G. W. Clark and A. A. de Lorimier, Berkeley, Calif.—p. 368.
Influence of Pulse Rate on Minute Volume Under Anesthesia. V. Tappan and E. H. Torrey, Baltimore.—p. 376.
*Amount of Bilirubin Formed in Liver, Spleen and Bone Marrow. F. C. Mann, C. Sheard and J. L. Bollman, Rochester, Minn.—p. 384.
Influence of Carbon Dioxide on Man During Exposure to Reduced Barometric Pressure. E. C. Schneider, D. Truesdell and R. W. Clarke, Middletown, Conn.—p. 393.
*Gastric Wavelets. W. C. Alvarez and A. Zimmermann, Rochester, Minn.—p. 405.
*Mechanism of Gallbladder. L. R. Whitaker, Boston.—p. 411.
*Uric Acid Metabolism: Production of Uric Acid by Bacteria. J. F. McDonald and V. E. Levine, Omaha.—p. 437.
*Depressor Action of Liver Extract. T. C. Burnett, Berkeley, Calif.—p. 449.
Effects of Bilateral Suprarenalectomy on Life of Rats. H. L. Jaffe, New York.—p. 453.
Sympathetic Innervation to Skeletal Muscle. S. S. Tower, Chicago.—p. 462.

Effect of Parathyroid Extract on Heart and Circulation.—Edwards and Page state that a comparison of the changes in heart function during hypercalcemia from overdoses of parathyroid extract, with observations on the effects produced by the administration of calcium salts in large amounts, shows features of similarity. The view is put forward that there is a hypercalcemia of the tissues as well as of the blood, and that the changes in heart action are mainly due to the calcium effect. The effects on circulatory dynamics accompanying parathyroid hypercalcemia may not be considered favorable, and in this light the administration of calcium in large amounts to patients with cardiac weakness is viewed as a questionable procedure.

Effect of Hepatectomy on Deaminization.—The deaminization of amino-acids in the body of the dog, according to Bollman et al., is entirely dependent on the presence of the liver, since deaminization ceases completely as soon as the liver is removed.

Effect of Pancreatectomy on Blood Sugar.—The concurrent changes in blood sugar and the urinary excretion of sugar and nitrogen have been followed by Chambers and Coryllos in fasting dogs after pancreatectomy under iso-amylethyl-barbituric acid anesthesia. An increase in blood sugar is found to begin within the first two hours after the removal of the pancreas, indicating that there is normally a regulatory action on the blood sugar level due to a constant supply of insulin. The rate of mobilization of carbohydrate is calculated from the blood sugar changes and excretion of sugar in the urine. The results suggest an early effect of the lack of insulin on sugar metabolism which reaches a maximum in about twenty-four hours. The first marked reaction of the extirpation of the pancreas on the elimination of nitrogen is concurrent with the appearance of the glycosuria.

Effect of Cutting on Rate of Hair Growth.—Seymour has made personal observations of hair growth for nearly three years. He says that in some undetermined manner shaving serves as a stimulus to growth of facial hair in man; the actual cutting of the hair seems to be the accelerating factor. The rate of hair growth is most rapid immediately subsequent to cutting, the rate gradually lessening as the time of cutting becomes more remote. Although variations in rate were found, no correlation with temperature or season was noted. Apparently the hyperemic conditions that accompany shaving are not responsible for the acceleration of the growth rate.

Movements of Large Intestine.—A study made by Currie and Henderson of the movements in the large intestine of the guinea-pig shows that the movements of the longitudinal coat are apparently of greater importance than those of the circular coat in forwarding the content of the intestine.

Seasonal Variation in Urinary Excretion of Phenols.—Records kept by Holck for two years show that phenols run about 120 mg. higher daily in the urine during the summer than during the winter, with intermediate figures for the spring and fall. In view of the observations of Koch and Reed that exposure of dogs to ultraviolet rays in many cases gives rise to higher "uric acid" figures in the blood, and of the fact that tyrosine is a mother substance of both phenols and melanins, the greater exposure to sunlight during the summer may be a cause of the higher phenol excretion during that season.

Cardiac Reactions to Drugs and C_H of Blood.—Salant and Nadler found that disturbance of the acid base equilibrium of the blood modifies the effect of caffeine on the heart in different animals. Medium doses of caffeine stimulate or produce no effect, and larger doses depress the normal heart in cats. These amounts stimulate the normal heart in dogs.

Physiology of Pancreas.—Farrell and Ivy assert that a humoral mechanism for external pancreatic secretion is proved by the fact that a pancreatic transplant is stimulated to secrete after the ingestion of a meal. Since the pancreatic transplant secretes continuously, the continuous secretion of the pancreas is at least in part due to some humoral influence. The secretion of the pancreatic transplant is qualitatively quite identical with the secretion of a chronic pancreatic fistula dog with possibly the exception that it is low in inorganic solids. Different foods cause the secretion of the transplant to vary decidedly in quantity, but not significantly in quality.

Emptying of the Gallbladder.—Observations on the emptying of the gallbladder have been made by Higgins and Mann on a number of different species of animals, including fishes, amphibia, birds and mammals. In general, their results confirm those of Boyden, that the gallbladder invariably empties following a diet rich in fat.

Source of Bilirubin.—Results of experiments done by Mann et al. show that unquestionably all but a small amount of bilirubin is made outside the abdominal cavity. Since the bone marrow is the only tissue in the remaining portion of the body in which it has been definitely proved that bilirubin is made, and since it is the only tissue outside the abdominal cavity which would appear to have the capacity to form large amounts of bile pigment, the conclusion is evident that most of the bilirubin is made in the bone marrow. While bilirubin is made in both the spleen and the liver, the amount is insignificant as compared with that made in the bone marrow. Of the two former organs, more bilirubin is formed in the spleen than in the liver. As a matter of fact, in the normal animal the amount of bilirubin made in the liver and spleen need not be considered in relation to the total amount of the pigment made in the whole body, since bilirubin can be formed at its normal rate in the absence of these two organs.

Gastric Wavelets.—In the stomach of the rabbit opened under Locke's solution, small rhythmic contractions have been found by Alvarez and Zimmermann, with rates varying between 5 and 54 a minute. The commonest rates met with have been between 12 and 24. These wavelets are superimposed on the larger contractions of the stomach, on the systoles and the peristaltic waves. There is some evidence that they occur in man.

Mechanism of Gallbladder.—By the employment of iodized oil as an opaque medium, the gallbladder is shown by Whitaker to empty its contents into the duodenum during the digestion of fats. This emptying is produced primarily by the muscular tunic of the gallbladder, extrinsic mechanical factors having no appreciable effect. Emptying probably does not depend on a reflex nervous mechanism involving extrinsic nerves, since vagal stimulation has no effect and denervated gallbladders empty normally. There is no direct evidence that the expulsive action of the gallbladder is due to a hormone, although it invariably depends on the digestion and absorption of proteins or fats, especially the latter. The action of the so-called sphincter papillae seems to be to allow the gallbladder to fill during the intervals between periods of digestion; but the vesicle will not empty after the sphincter is cut, feeding being necessary, as in normal animals, to effect this result.

Production of Uric Acid by Bacteria.—McDonald and Levine aver that certain bacteria commonly parasitic to human beings synthesize purines and convert part of them into uric acid. The following organisms showed evidence of uric acid formation in nonpurine medium: *B. fecalis-alkaligenes, B. enteritidis, B. paratyphoid* B, a mixed culture from the oral cavity, and one strain of *Staphylococcus pyogenes-albus*. This fact should have an important bearing

on the normal and pathologic variations in the uric acid of human blood. If the uric acid produced by bacteria is, like indican, absorbed unchanged from the bowel or from any other anatomic region, it would tend to add to the content of the blood uric acid of endogenous and of exogenous origin.

Depressor Action of Liver Extract.—Attention is called by Burnett to the fact that rabbits are unsatisfactory animals for long-continued experiments on blood pressure for the reason that their pressure falls continuously from the influence of the dorsal decubitus alone. The similarity of curves due to liver extract and those due to histamine is pointed out, and the opinion is expressed that histamine, possibly combined with some other substance, is responsible for the lowering of blood pressure when liver extract is injected; an opinion that is based on biologic evidence.

Archives of Surgery, Chicago

13: 459-616 (Oct.) 1926

*Surgery of Lung. Experimental Lobectomy and Pneumectomy. S. A. Schlueter and I. F. Weidlein, Cleveland.—p. 459.
*Abscesses and Inflammatory Tumors in Spinal Epidural Space (So-Called Pachymeningitis Externa). W. E. Dandy, Baltimore.—p. 477.
Intussusception of Cecum Coli. K. H. Martzloff, Portland, Ore.—p. 495.
*Torsion of Great Omentum Producing Symptoms Simulating Acute Appendicitis. J. W. Hinton, New York.—p. 507.
*Valves of Heister. S. H. Mentzer, Rochester, Minn.—p. 511.
*Brittle Bones and Blue Sclera: Hereditary Hypoplasia of Mesenchyme. J. A. Key, St. Louis.—p. 523.
*Relationship Between Vertebral Epiphysitis and Spinal Deformity. J. Buchman, New York.—p. 568.
Experimental Acute Gastric Fistula. W. Walters and J. L. Bollman, Rochester, Minn.—p. 578.
*Postoperative Gaseous Distention of Intestine. M. A. McIver, E. B. Benedict and J. W. Cline, Jr., Boston.—p. 588.
Thirtieth Report of Progress in Orthopedic Surgery. R. B. Osgood, N. Allison, P. D. Wilson, H. Bucholz, R. Soutter, H. C. Low, M. S. Danforth, L. T. Swaim and M. N. Smith-Petersen, Boston.—p. 605.

Experimental Lobectomy and Pneumectomy.—The observations made by Schlueter and Weidlein in their experiments substantiate the work of others showing that an entire lung can easily be removed from dogs, that the animals survive the operations, that they remain free from any deleterious sequelae, and that the severed bronchus heals by scar tissue formation, provided infection has not been introduced. Clinically, the removal of a lobe of a lung would seem to be a less hazardous procedure if infection from the bronchial lumen were avoided. A method has been devised by the authors in this experimental work which may be of some assistance in securing an aseptic air-tight closure of a bronchus in clinical cases.

Extradural Inflammatory Tumors.—In three cases of extradural inflammatory tumors, around which a group of acute and chronic cases have been assembled from the literature by Dandy, the infections arose either from direct extension of contiguous infections of the soft parts, or from hematogenous metastasis of an infection in remote parts of the body. Dandy believes that the symptoms of these infections are sufficiently characteristic to represent a clinical syndrome. The treatment is surgical removal.

Torsion of Omentum Simulating Appendicitis.—In the case reported by Hinton there was no evidence of hernia or pelvic infection, and the appendix showed no macroscopic evidence of disease. The patient had a chronic cholecystitis and cholelithiasis, but there were no adhesions or bands in the upper part of the abdomen.

Valves of Heister.—The study made by Mentzer suggests that the valves of Heister check the rapid passage of bile into or out of the gallbladder, presumably so that bile in the gallbladder may remain at a relatively uniform consistency. The functional activities of the valves of Heister cannot be very important, since the majority of animals do not possess the valves or their functional equivalent. Moreover, eight normal gallbladder specimens from human beings examined at necropsy were without leaflets or indications of their having existed.

Brittle Bones and Blue Sclera.—From an analysis of the literature, it is shown by Key that blue sclera is the only feature of hereditary hypoplasia of the mesenchyme which is present in every case and which is transmitted as a dominant hereditary character. The other abnormalities are short stature, brittle bones, hypermobility of joints and deafness. Key believes that idiopathic fragility of bones is due to an abnormality in development rather than to a metabolic disturbance.

Vertebral Epiphysitis and Spinal Deformity.—It is Buchman's belief that vertebral epiphysitis is a competent cause of spinal deformity. In the two cases reported, with negative clinical and definite roentgenologic symptoms presented, the patients subsequently developed deformities.

Postoperative Gaseous Distention of Intestine.—McIver et al. assert that the origin of the gases found in intestinal meteorism is threefold: the decomposition of intestinal contents; the diffusion of blood gases into the intestinal lumen through the mucosa, and the passage of atmospheric air from the stomach into the intestine. Absorption into the blood stream is an important method of eliminating intestinal gases. The rate at which absorption proceeds varies greatly for the different gases. Animal experiments showed that gas may be forced from the stomach into the lower intestinal tract by peristalsis or by increased gastric tone, thereby causing distention of the small intestine and colon. The experiments on the distention accompanying general peritonitis suggest that atmospheric air is an important source of gas in these cases. Since rest is a fundamental principle in the treatment of injury, the quieting effect of morphine is beneficial and drugs such as physostigmine or pituitary extract which are capable of setting up violent types of peristalsis should usually be avoided. In cases in which serious distention is feared, the continuous use of a small stomach tube during the critical period should be considered.

Boston Medical and Surgical Journal

195: 737-780 (Oct. 14) 1926

*Treatment of Hemangioma at Collis P. Huntington Memorial Hospital. G. W. Taylor, Boston.—p. 737.
Value of Complete Routine Examinations in Supposedly Healthy People. E. L. Fisk, New York.—p. 740.

Treatment of Hemangioma.—One hundred and ninety-three cases of hemangioma are described and analyzed by Taylor. The results of surgical treatment are given. The technic of radium treatment and the results secured with it are discussed. Surgical excision is the method of treatment preferred in small accessible hemangiomas when a scar will not be disfiguring. Radium treatment is successful in telangiectatic angiomas and in small superficial lesions of skin or mucous membranes. Radium treatment is moderately satisfactory in deep seated lesions. Radium treatment is unsatisfactory in port wine marks and in superficial diffuse lesions. Reactions with their sequelae of scars and telangiectases can largely be avoided by using only silver screened radiation.

California and Western Medicine, San Francisco

25: 465-576 (Oct.) 1926

Is Medicine Drifting into Lay Control? R. Brown, Santa Barbara.—p. 465.
Obstetric Anesthesia. C. H. Lewis, Santa Monica.—p. 469.
Allergy: Practical Experience Versus Theory. A. C. Reed, San Francisco.—p. 472.
Neurasthenic Patient. O. F. Johnson, Sacramento.—p. 474.
Prolapse in Young Women with Cystocele and Rectocele. F. W. Lynch, San Francisco.—p. 477.
*Influence of Bowel Irritation Over Gastric and Duodenal Region. R. M. Clarke, Los Angeles.—p. 480.
Sinus Infection in Children. F. M. Shook, Oakland.—p. 482.
Cosmetic Surgery of Thyroid Under Local Anesthesia. C. C. Tiffin, Seattle, Wash.—p. 485.
Advantages of Medical Social Service in Orthopedic Surgery. G. J. McChesney, San Francisco.—p. 487.
How Men Die in Prison. L. L. Stanley, San Rafael, Calif.—p. 488.
*Technic of Administration of Sodium Tetraiodophenolphthalein in Cholecystography. G. Cheney, San Francisco.—p. 492.
Analysis of Heart Sounds and Murmurs by Graphic Means. J. J. Sampson and R. L. McCalla, San Francisco.—p. 494.
Torsion of Testicle: Two Cases. T. E. Gibson, San Francisco.—p. 500.
Preoperative Preparation and Surgical Treatment of Carcinoma of Pancreas with Common Duct Obstruction. L. P. Bell, Woodland.—p. 503.

Bowel Irritation Cause of Gastric Ulcer.—Clarke says that of thirty-seven ulcer cases seen by him, not one patient gave

a normal bowel history. They ranged all the way from severe constipation to looseness, with five or six mushy stools a day. Careful bowel management should therefore be a part of the treatment of all gastric cases, especially those with ulcer or ulcer symptoms.

Cholecystography.—Cheney advocates the intravenous injection of tetraiodophenolphthalein by the gravity method. General reactions occurred in only 3 per cent of 122 cases.

Colorado Medicine, Denver

23: 319-342 (Oct.) 1926

Cooperation in Medicine. G. H. Curfman, Salida.—p. 323.
Incarcerated Inguinal Hernia with Superimposed Gangrenous Appendix Resulting in Intestinal Obstruction. H. J. Sims, Ft. Smith, Ark. —p. 327.
Tularemia. C. E. Harris, Basin, Wyo.—p. 328.
Lithopedion. S. D. Van Meter, Denver.—p. 334.
Surgical Railroading. H. G. Wetherill, Monterey, Calif.—p. 337.

Florida Medical Association Journal, Jacksonville

13: 83-101 (Oct.) 1926

Outlook in Diabetic Children. L. Limbaugh, Jacksonville.—p. 83.
Mercurochrome in Treatment of Septicemia of Mastoid Origin. T. H. Odeneal, West Palm Beach.—p. 86.
Squint. S. Richardson, Jacksonville.—p. 89.
Fractures of Shaft of Femur Treated by Traction. F. L. Fort, Jacksonville.—p. 91.
Lead Poisoning in Children. L. W. Holloway, Jacksonville.—p. 94.

Indiana State Medical Association Journal, Ft. Wayne

19: 395-438 (Oct.) 1926

*Biologic Diagnosis and Treatment of Tuberculosis of Outpatients. E. Loewenstein, Vienna.—p. 395.
Shall We Wait for Shock to Pass Before Operating? M. F. Porter, Fort Wayne.—p. 401.
Tularemia: Two Cases. W. D. Asbury, Terre Haute.—p. 404.
Control of Scarlet Fever. G. F. and G. H. Dick, Chicago.—p. 406.

Treatment of Cough in Tuberculosis.—For the treatment of the dry cough accompanying pulmonary tuberculosis, Loewenstein prescribes pills, each containing methenamine, 0.2 Gm.; thebaine, 0.005 Gm.; cocaine, 0.005 Gm.; sodium borate, 0.01 Gm.; menthol crystals, 0.01 Gm., and one drop of epinephrine with as much sugar as is necessary for pills. These pills should be sucked as candy. In cases with expectoration, he uses these pills to stop coughing only at night. In cases in which coughing is too distressing, patients take these pills after meals. Speaking of the tuberculin treatment of tuberculosis, Loewenstein says: "The tuberculin treatment promotes the fibrous metamorphosis of ulcerous phthisis better than any other form of treatment."

Johns Hopkins Hospital Bulletin, Baltimore

39: 199-269 (Oct.) 1926

Anatomy of Heart in Two Cases of Situs Transversus. H. B. Taussig, Baltimore.—p. 199.
*Interruption of Pregnancy in Rat by Injection of Ovarian Follicular Extract. M. G. Smith, Baltimore.—p. 203.
*Effects of Guanidine Compounds on Blood Pressure. R. H. Major, Kansas City, Kan.—p. 215.
*Effect of Hepatic Extract on Experimental Hypertension Produced by Guanidine Compounds. R. H. Major, Kansas City, Kan.—p. 222.
*Arteriosclerosis of Cerebral Vessels and Pathogenesis of Hypertension. J. Bordley, III, and B. M. Baker, Jr., Baltimore.—p. 229.

Interruption of Pregnancy.—Smith found it possible to interrupt pregnancy in the rat by the injection of follicular ovarian extract during the first five days of pregnancy. As the pregnancy proceeds from the first to the fifth days it becomes necessary to inject much larger amounts of the follicular extract in order to interfere with its course. From these observations it seems probable that there is at least a difference in function between the follicular secretion and that of the corpus luteum.

Effect of Guanidine Compounds on Blood Pressure.—Major states that methylguanidine sulphate, when introduced very slowly into the body, is either destroyed or neutralized in such a way that no elevation in blood pressure occurs. Methylguanidine sulphate is absorbed from the gastrointestinal tract, the absorption being greatest from the ileum and markedly less from the stomach, duodenum, jejunum and colon.

Effect of Hepatic Extract on Experimental Hypertension.—The evidence obtained by Major points to an action of guanidine on the arterioles and capillaries as a mechanism by which the elevation in blood pressure is produced, and also indicates that the action of liver extract consists in abolishing this vasoconstriction. The exact mechanism of this action remains to be studied further. The liver extract used for these experiments had no effect on the blood pressure of a normal animal when employed in the doses used in these experiments. The method of its action suggests, at least in part, a neutralization of the effect of the guanidine either on the nerve endings in the smooth muscle of the blood vessels, or on the smooth muscle itself.

Arteriosclerosis of Cerebral Vessels and Hypertension.—Bordley and Baker have found only one condition of the general circulation which they feel may in some way be responsible for an elevation of blood pressure. That condition is cardiac decompensation. In several cases studied, the blood pressure, which was comparatively high in a state of decompensation, fell as the heart began to compensate. This, in the light of the older explanations of blood pressure levels, would appear to be a rather paradoxical state of affairs. From the authors' point of view it is readily explainable; the blood pressure falls as the cerebral circulation improves.

Journal of Immunology, Baltimore

12: 177-249 (Sept.) 1926

*Basic Concepts of Immunity. W. H. Manwaring, San Francisco.—p. 177.
Individuality of Semen: Its Property of Inhibiting Specifically Isohemo-Agglutination. K. Yamakami, Hokkoido, Japan.—p. 185.
Hypersensitiveness: XXV. Degree of Sensitivity of Asthmatics to Various Atopens. A. H. Fineman, New York.—p. 191.
*Bactericidal Action of Serum Following Injections of Epinephrine. G. H. Smith, New Haven, Conn.—p. 205.
*Immunity to Pneumococcus Produced by Feeding Tissues of Animals Killed by Same Organism. V. Ross, Bloomfield, N. J.—p. 219.
Study of Pollen Immune Serum. S. G. Ramsdell, Los Angeles.—p. 231.
*Immunity to Pneumococcus Produced in Rats by Feeding Them Germ. V. Ross, Bloomfield, N. J.—p. 237.

Basic Concepts of Immunity.—An inquiry was made by Manwaring as to whether or not the three major hypotheses underlying the Ehrlich theory as to the origin and nature of antibodies are in accord with known physiologic facts. The author cites evidence that is inconsistent with the Ehrlich hypothesis. The conclusion is drawn that the Ehrlich theory is merely of historical interest; that it should be discarded by practical serologists and clinicians, and eliminated from elementary textbooks for medical students. As a substitute for the Ehrlich theory, the author suggests the theory that immunologic antibodies are not "side-chains," but that they are new substances, formed as a result of interaction between injected antigens and extracellular and intracellular hydrolyzing and synthesizing enzymes, and by these enzymes specifically adapted to the antigens or to products of antigen hydrolysis. The author believes that this theory is in accord with the known facts of cellular biology, and that its acceptance would stimulate the hope that in time therapeutic antibodies, possibly even superior to those formed in the animal body, may be successfully synthesized in the chemical laboratory.

Epinephrine Increases Bactericidal Power of Serum.—Smith states that the intraperitoneal or subcutaneous injection of normal rabbits with epinephrine in quantities of from 0.5 to 2 cc. is followed by an increased capacity of the serum to kill bacteria. Large doses of epinephrine exert an opposite effect. The increased bactericidal action is not specific, although it is more readily demonstrated with some organisms (*B. typhosus*) than with others (*Staphylococcus aureus*). The effect becomes apparent shortly after the injection (within thirty minutes), and attains its maximum within from one and one-half to two hours. After this interval, the normal potency of the serum is gradually restored, the original value being approximated within twenty-four hours. By repeated stimulation through daily injections of epinephrine the tendency to respond with increased bactericidal titer is diminished, suggesting that the reacting mechanism becomes

exhausted, or that the animal develops a tolerance to the epinephrine. The increase in bactericidal action is not referable to a blood concentration or to a mobilization of the known antibodies.

Immunity to Pneumococcus.—These experiments by Ross show that rats fed on tissues of animals killed by pneumococcus type I show an increased resistance to intraperitoneal injections of the same germ. The protection seems to be type specific. Protective substances exist in the serums of the immunized animals. Reference is made to the very favorable immunization created by feeding pneumococci. An explanation is suggested for the fact that those types of pneumococci most commonly found in normal mouths are the cause of a minority of actual cases of lobar pneumonia.

Immunity to Pneumococcus.—Ross states that rats fed the living pneumococci from 50 cc. culture daily are considerably more resistant to intraperitoneal injections of the same organism than are untreated control animals. The degree of protection is as good, although not so regular, as that previously reported as having been obtained when the tissues of animals killed by pneumococcus were fed. Rats that are fed the heat-killed pneumococci (80 C., two hours) in the same quantities show a decidedly inferior degree of immunity.

Journal of Infectious Diseases, Chicago

39: 261-344 (Oct.) 1926

Biology of Oidium Albicans. A. A. Draper, Cincinnati.—p. 261.
*Intravenous Use of Acriviolet and Mercurochrome in Bacterial Infections. J. S. Simmons, Washington, D. C.—p. 273.
Heat Resistance Studies: II. Protective Effect of Sodium Chloride on Bacterial Spores Heated in Pea Liquor. J. A. Viljoen, Washington, D. C.—p. 286.
Variation in Number of Blood Cells of Normal Rabbits. L. D. Bushnell and E. F. Bangs, Manhattan, Kan.—p. 291.
Method for Detection of Changes in Gelatin Due to Bacteria. W. C. Frazier, Washington, D. C.—p. 302.
Method for Suspending and Counting Living Tubercle Bacilli. F. B. Jennings, Jr., New York.—p. 310.
*Spontaneous Tuberculosis in Salt Water Fish. J. D. Aronson, Philadelphia.—p. 315.
*Highly Heat-Resistant Sporulating Anaerobic Bacterium, Clostridium Caloritolerans, N. Sp. K. F. Meyer and O. W. Lang, San Francisco.—p. 321.
*Characteristics of New Type Strain of Cl. Tetani. G. E. Coleman and and K. F. Meyer, San Francisco.—p. 328.
*Tetanus Agglutinins and Antitoxin in Human Serums. G. E. Coleman and K. F. Meyer, San Francisco.—p. 332.
Prophylaxis and Treatment of Snuffles. A. Tanaka, Chicago.—p. 337.
Precipitin Reactions of Extracts of Various Animal Parasites. L. Hektoen, Chicago.—p. 342.

Acriviolet and Mercurochrome in Bacterial Infections.—Experimental and clinical observation lead Simmons to the belief that the intravenous use of either mercurochrome-220 soluble or acriviolet does not offer promise of beneficial results in the treatment of bacterial infections. The number of clinical cases in which the dyes were used was small. Still, from these results, and from the decidedly unfavorable results attending the experiments on animals, continued use of the drugs is considered unadvisable. Both acriviolet and mercurochrome-220 soluble, in 5 per cent solutions in 50 per cent alcohol, were found to be fairly good skin disinfectants against the normal organisms of the skin and throat.

Tuberculosis in Salt Water Fish.—From different organs of salt water fish that died in an aquarium, Aronson has isolated an acid-fast bacillus. Tubercles were found in the spleen and liver of all of the fish examined and in the gills, kidneys, roe, pericardium and eye of some of the fish, and in one case the organism was isolated from the tissue of an intestinal ulcer. The organism isolated was an acid-fast, chromogenic, pleomorphic bacillus which grows best at from 18 to 20 C., is pathogenic for pigeons, mice, goldfish and frogs, but does not kill rabbits or guinea-pigs. The cultures isolated from these salt water fish differ in antigenic characters from the avian and mammalian varieties of *B. tuberculosis*, from acid-fast bacilli isolated from poikilothermic animals, and from saprophytic acid-fast bacilli. The name *Mycobacterium marinum* is suggested for this organism.

Clostridium Caloritolerans N. Sp.—In a pooled spore suspension of *Clostridium botulinum* type A, a sporulating anaerobe with a heat resistance of 510 minutes at 100 C. was encountered by Meyer and Lang, for which the specific name *Clostridium caloritolerans*, N. Sp. is proposed.

New Type Strain of Clostridium Tetani.—A strain of *Clostridium tetani* tentatively considered as type 8 has been studied comparatively with three type 1 strains by Coleman and Meyer. No marked differences, other than serologic, have been noted between these strains.

Tetanus Agglutinins in Human Serum.—Of 104 human serums studied by Coleman and Meyer, twenty-one showed no tetanus agglutinins in dilutions of 1:10 or higher; fifty-three (50.9 per cent) contained this antibody in dilutions of 1:20 or higher, and seventeen (16.3 per cent) at from 1:40 to 1:60. Agglutinins occurring in serum diluted 1:40 are assumed to be diagnostic for *Clostridium tetani*. In this or higher dilutions, type 5 was found eleven times (55 per cent); type 2, five times (25 per cent), and type 1, four times (20 per cent). The serum of a single individual may agglutinate as many as five types of *Clostridium tetani*. No antitoxin was found in serums, irrespective of the presence or absence of agglutinins.

Medical Journal and Record, New York

124: 453-524 (Oct. 20) 1926

Nature's Cure of Gallstone Disease and Occasional Necessity of Surgery to Complete It. M. Einhorn, New York.—p. 453.
Ultimate Treatment of Radical Mastoid Operation. G. B. McAuliffe, New York.—p. 455.
Chemical Aspects of Life and Disease. E. McDonald, Philadelphia.p. 457.
Public Health Administration in Toronto. C. J. Hastings, Toronto.—p. 461.
Placenta Praevia. A. L. McIlroy, London.—p. 465.
Treatment of Cancer. R. J. Behan, Pittsburgh.—p. 468.
Protein Therapy in Pelvic Infection. H. Pike, New York.—p. 471.
Right Diaphragmatic Eventration, Accompanied by Cardiospasm as Reflex of Malignancy at Cardia. M. Golob, New York.—p. 473.
Endocrine Glands of Rats in Parabiosis. G. Pighini and M. de Paoli, St. Maurizio, Italy.—p. 474.
Leonardo Da Vinci: Anatomist and Physiologist. L. Vaccaro, Philadelphia.—p. 476.
Pyelographic Diagnosis of Renal Tumor. M. F. Campbell, New York.—p. 481.
Kidney Disease. J. W. Shuman, Los Angeles.—p. 485.
Fulminating Uremias. R. Floyd, New York.—p. 486.
Unilateroprevertebral Fused Kidney. A. Saikin, New York.—p. 490.
Treatment of Enuresis. A. I. Blau, New York.—p. 492.
Enuresis: Two Cases. W. J. Erickson, Philadelphia.—p. 493.
Untoward Effects of Arsphenamines. C. W. Birnie, Sumter, S. C.—p. 495.
Endocrine Therapy. H. H. Rubin, New York.—p. 497.
Use of Respiratory Stimulant in Surgery. O. Huebler, Vienna.—p. 498.

Mental Hygiene, Albany, N. Y.

10: 225-448 (April) 1926

Practical Aspects of Parental Love. E. L. Richards, Baltimore.—p. 225.
Mental Health in Childhood. M. E. Kenworthy, New York.—p. 242.
Significance of Psycho-Analysis for Social Life. O. Rank, Vienna.—p. 253.
Insanity and Crime. W. A. White, Washington, D. C.—p. 265.
Trends in Development of Relationships Between Psychiatry and General Social Case-Work. L. G. Lowrey, Cleveland.—p. 277.
Child Factor in Teacher-Pupil Relationship. E. V. N. Emery, Los Angeles.—p. 285.
Community Aspects of Child Guidance. R. H. Truitt, Los Angeles.—p. 294.
Social Adjustment of Moron Girls. E. R. Wembridge, Cleveland.—p. 307.
Educating Dependent Child. A. S. B. Guibord, Boston.—p. 318.
General Personality and Certain Features of Sex Life. F. L. Wells, Boston.—p. 345.
Neurotic Goal in Postwar Neuroses. J. W. Visher and G. Tartar, Waukesha, Wis.—p. 355.
San Juan de Dios Finds Followers. Mental Hygiene in Spain. H. Brickell, Madrid.—p. 362.

10: 449-672 (July) 1926

Mental Hygiene: Wise and Unwise Investments. C. P. Emerson, Indianapolis.—p. 449.
Meeting Psychiatric Needs in City: Aims and Problems of Cleveland Plan. L. G. Lowrey, Cleveland.—p. 464.
Emotional Handicaps to Intellectual Achievement in Supernormal Children. J. Regensburg, New York.—p. 480.
Therapeutic Application of Psycho-Analysis. O. Rank, Vienna.—p. 495.
McDougall's Compromise with Psycho-Analysis. A. Kardiner, New York.—p. 509.
Religious Healing. A. E. Paulsen, New York.—p. 541.
Frequency of Dementia Praecox in Relation to Sex, Age, Environment, Nativity and Race. H. M. Pollock, New York.—p. 596.

Michigan State Medical Society Journal, Grand Rapids

25: 457-544 (Oct.) 1926

Medical Problems and Progress. C. G. Darling, Ann Arbor.—p. 457.
Bile Duct Anomaly. J. Bellas, Marquette.—p. 460.
Fundamental Principles; Gastro-Intestinal Gradient. D. M. Cowie, Ann Arbor.—p. 464.
Proctitis Obliterans. H. I. Kallet, Detroit.—p. 468.
Immunization Against Tuberculosis. D. S. Brachman, England.—p. 470.
Treatment of Undernourished Child. H. T. Clay, Grand Rapids.—p. 474.
Surgical Advances Developed During War Applicable to Industrial Surgery. J. W. Vaughan, Detroit.—p. 476.

Military Surgeon, Washington, D. C.

59: 393-527 (Oct.) 1926

*Body Weight as Index of Physical Condition. W. R. Dear.—p. 393.
Development of Naval Medical Service. L. H. Williams.—p. 411.
Medical Service in French Lines. B. K. Ashford.—p. 416.
*Spinal Anesthesia. J. Izquierdo.—p. 432.
Vestibular Tests as Employed by Army (U. S.) Air Service. C. A. Pfeffer.—p. 435.
Lethargic Encephalitis: Treatment. F. G. Crookshank.—p. 439.
Anopheles Mosquitoes and Malaria at Eastern Army Stations. W. B. Borden.—p. 452.
*Renal Tuberculosis in Patient 74 Years of Age. E. L. Merritt.—p. 470.
Personal Recollections of Some Old Medical Officers. H. C. Yarrow.—p. 472.

Body Weight as Index of Physical Condition.—The records of physical examinations of 11,588 U. S. Army officers examined in 1924, Dear says, show that the averages of weight in different height and age groups do not conform to those experienced among male insured risks. Type of frame and musculature must be considered in formulating any statement of averages or in adjudging overweight or underweight. The effect on mortality rates shows that overweight is a disadvantage to all classes except young men, to whom a limited amount is apparently not a disadvantage. Light weight, after full maturity, is an advantage unless due to disease or malnutrition. Circumference of the abdomen compared to that of the chest at rest should be given careful consideration. In general, the longer the belt, the shorter the life.

Indications for Spinal Anesthesia.—In Izquierdo's opinion, the use of spinal anesthesia must be exclusively limited to those cases in which a general anesthetic such as ether or chloroform is not advisable on account of the bad condition of the patient.

Renal Tuberculosis in Aged.—Merritt reports the case of a woman, aged 74, who complained of severe bladder irritation, frequency and painful urination. External examination demonstrated the presence of a urethral caruncle, which was removed under local anesthesia. The bladder was filled with cloudy urine which had a very foul odor. The entire mucosa was a mass of ulcerations so dense that neither ureteral orifice could be located. These ulcerations bled very easily on contact with the cystoscope, so that in a few moments all vision was obscured. As far as could be ascertained, the entire bladder wall was thickened and indurated. There was also some enlargement of glands in both groins. A diagnosis was made of inoperable carcinoma of the bladder, and because of the patient's advanced age it was deemed best to resort to simple bladder irrigations and palliative measures. Under this treatment the condition improved greatly. Another cystoscopy was done after two months, and a positive diagnosis of tuberculosis of the kidney was made. Merritt advises caution in similar cases; it should not be forgotten that renal tuberculosis occasionally occurs in aged persons and that when it does it often presents a clinical and cystoscopic picture not unlike carcinoma.

Missouri State Medical Association Journal, St. Louis

23: 355-384 (Oct.) 1926

Prevention of Blindness. P. Lewis, Buffalo.—p. 355.
Surgical Goiter. K. Kinard, Kansas City.—p. 360.
Painful Heel and Metatarsal Neuralgia. A. E. Hertzler, Kansas City.—p. 368.
*Strongyloides Intestinalis Infection. M. P. Neal and H. P. Muir, Columbia.—p. 369.
*Transfusion in Treatment of Anemia. W. W. Duke, Kansas City.—p. 371.

Strongyloides Intestinalis Infestation.—Diarrhea associated with the presence of *Strongyloides intestinalis* has been found by Neal and Muir in Missouri. The infection probably was acquired during the close association with Chinese students three years previous to the first manifestation of diarrhea. Eosinophilia, considered as one of the clinical indexes to most of the parasitic infections, was absent in this case. This nematode, being infectious through the skin from contaminated soil and through the digestive system from food and drink, adds another to the long list of reasons for proper disposal of excreta.

Contraindication to Transfusion.—After experience with 700 transfusions, Duke has decided that the only contraindication to transfusion is brain hemorrhage and allergy.

New Orleans Medical and Surgical Journal

79: 233-298 (Oct.) 1926

Yatren 105 in Treatment of Amebic Dysentery. R. H. Turner and P. H. Jones, New Orleans.—p. 233.
Treatment of Cancer of Cervix Uteri. J. S. Ullman, Natchez, Miss.—p. 240.
Malignancy. W. W. Crawford, Hattiesburg, Miss.—p. 241.
Radium in Treatment of Cervical Carcinoma. J. P. Wall, Jackson, Miss.—p. 246.
Radium Versus Surgery in Pathologic Uterus. W. H. Anderson, Booneville, Miss.—p. 252.
Breast Abscess. W. E. Levy, New Orleans.—p. 258.
Who is Insane? J. M. Buchanan, Meridian, Miss.—p. 262.
Skull Fractures. C. P. Gray, Monroe, La.—p. 267.
Plea for Administration of Prophylactic Measures. G. Darrington, Vicksburg, Miss.—p. 270.
Pain in Right Iliac Region. R. B. Yates, Greenwood, Miss.—p. 274.
Preschool Child. F. J. Underwood, Jackson, Miss.—p. 277.
Surgery of Spleen. H. A. Gamble, Greenville, Miss.—p. 284.

New York State Journal of Medicine, New York

26: 807-842 (Oct. 1) 1926

Subdeltoid Bursitis: Twelve Cases. M. B. Cooperman, Philadelphia.—p. 807.
Management of Vomiting of Pregnancy. J. K. Quigley, Rochester, N. Y.—p. 814.
Use and Misuse of Ultraviolet Therapy. A. F. Hess, New York.—p. 816.
Cholecystography by Oral Method. W. H. Stewart and E. J. Ryan, New York.—p. 819.
Pruritus. S. Pollitzer, New York.—p. 822.

26: 843-882 (Oct. 15) 1926

*Arsenic as Etiologic Factor in Genesis of Eczema. B. Throne, L. S. Van Dyck, E. Marples and C. N. Myers, New York.—p. 843.
Systemic Otogenous Infections. S. J. Kopetzky, New York.—p. 849.
Gestational Gland. R. T. Frank, New York.—p. 851.
Postgraduate Instruction in Seventh District Branch. B. J. Slater, Rochester.—p. 854.
Postgraduate Education. H. J. Noerling, Valatie.—p. 855.
Auburn's Experience with Toxin-Antitoxin. G. C. Sincerbeaux, Auburn.—p. 857.
Public Health Activities in County Medical Societies of Fourth District Branch. E. H. Ormsby, Amsterdam.—p. 859.
Periodic Health Examination. E. H. King, Saratoga Springs.—p. 861.

Arsenic and Eczema.—Experience has shown Throne et al. that the blood sugar content runs parallel with the blood chloride content in eczema, and that exacerbations always occur when the 500 mark is reached for the chlorides. Patients at the menstrual period also show abnormalities both in the chemical changes of the blood and in their clinical improvement. These patients are maintained as nearly as possible on a salt-free 10 per cent carbohydrate diet. The treatment consists of the intravenous injection of 5 cc. of 10 per cent sodium thiosulphate solution which has been freshly prepared. That arsenic is an etiologic factor in the genesis of eczema is demonstrated by its presence in the urine. Eczema follows the ingestion of arsenic through foods, and internal contact through its presence in the blood stream, thereby producing pathologic lesions in the skin as a result of dysfunction of the cells of the skin. Histopathologic examination in these cases confirms the diagnosis of chronic eczema.

Oklahoma State Medical Association Journal, Muskogee

19: 263-285 (Oct.) 1926

Tubercular Peritonitis. R. A. McGill, Tulsa.—p. 263.
Treatment of Pulmonary Tuberculosis by Intravenous Injections of Mercurochrome. B. A. Hayes, Oklahoma City.—p. 269.
Tuberculosis in Ex-Soldier. C. E. Bates, Oklahoma City.—p. 271.
Chronic Villous Type of Arthritis Deformans. S. Goodman, Tulsa.—p. 273.

Physical Therapeutics, Baltimore

44: 541-580 (Oct.) 1926

Treatment of Local Infection. W. B. Snow, New York.—p. 541.
Low Volt Electric Waves in Intestinal Inactivity. G. B. Massey, Philadelphia.—p. 551.
Placing Physiotherapy Before Profession. H. E. Stewart, New Haven, Conn.—p. 557.
Recent Progress in Education in Physiotherapy. N. E. Titus, New York. p. 560.
Recent Progress in Phototherapy and Apparatus. F. T. Woodbury, New York.—p. 564.

Texas State Journal of Medicine, Fort Worth

22: 361-422 (Oct.) 1926

Radium in Treatment of Nasal Polypi. S. N. Key, Austin.—p. 372.
Mastoiditis in Infants. E. H. Cary, Dallas.—p. 373.
Spine Injuries Without Accompanying Cord Injury. H. L. Farmer, Fort Worth.—p. 376.
Uterine Displacements. R. F. Metcalfe, Houston.—p. 379.
Skin Grafting of Extensive Areas. C. S. Venable, San Antonio.—p. 381.
Present Status of Arthroplasty. B. L. Schoolfield, Dallas.—p. 382.
Arthroplasty of Hip and Knee. W. B. Carrell, Dallas.—p. 384.
Importance of Health Education. A. H. Flickwir, Houston.—p. 388.
Blood Picture as Aid in Diagnosis of Ruptured Ectopic Gestation. M. M. Carr and K. M. Lynch, Dallas.—p. 390.
Glossopharyngeal Neuralgia: Surgical Relief. A. O. Singletou, Galveston.—p. 392.
Cardiac Infarct. G. Graves, Houston.—p. 395.
Should Railroad Hospital, Maintained Primarily for Railroad Employees, Treat Private Pay Patients? R. H. McLeod, Palestine.—p. 400.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2: 921-1017 (Oct.) 1926

Discipline as Factor in Treatment of Tuberculosis. B. B. Edwards, Tucson, Ariz.—p. 921.
*Hemoptysis. G. H. Crofton, Washington, D. C.—p. 924.
Fear in Tuberculosis. C. B. Devine, Whipple, Ariz.—p. 927.
Treatment of Excited States in Mentally Ill Ex-Soldier. R. G. Eaton, Knoxville, Iowa.—p. 932.
Asthenic Bulbar Paralysis. A. G. Dumas, Minneapolis.—p. 940.
Artificial Limbs and Care of Stumps of Amputation Cases. J. F. Barry, Washington, D. C.—p. 948.
Comparative Results with U. S. Veterans' Bureau Wassermann and Kahn Tests. A. Lederer, Maywood, Ill.—p. 955.
Diverticulitis of Small Intestines. W. B. Rile, Algeria, La.—p. 958.
Social Work as Aid to Psychiatry. J. G. Harvey, Washington, D. C.—p. 962.
Medical Library. E. B. Hall, Washington, D. C.—p. 965.
Mechanical Replacement of Temporomandibular Articulation. T. R. Palmer, Newark, N. J.—p. 967.
*Acute Lymphoid Leukemia: Necropsy Findings. M. B. Marcellus, Portland, Ore.—p. 969.
*Rupture of Aorta into Pericardial Sac. E. T. Gallagher, Jefferson Barracks, Mo.—p. 972.

Hemoptysis.—Crofton is convinced that the diagnosis of ulcerative pulmonary tuberculosis should not be made on the history of hemoptysis alone. The records of the bureau show that, while 80 per cent of the claimants examined for tuberculosis give a history of blood spitting, only 25 per cent of these patients are found to be really tuberculous. In all the other cases the most careful physical examination and definite parenchymatous roentgen-ray study fail to reveal any sign of pulmonary tuberculosis. In many cases, the bleeding is due to some cause other than pulmonary tuberculosis, such as acute infection of the upper, as well as the lower, respiratory passages. It may occur in persons suffering from rhinopharyngitis, subacute tonsillitis, laryngitis, or varicose blood vessels at the base of the tongue, trachea or esophagus. Other diseases commonly accompanied by hemorrhage are lobar pneumonia, pleurisy, bronchiectasis, syphilis, and also neoplasm, abscess, gangrene and hydatid cyst of the lungs. Aneurysm, pulmonary thrombosis or embolism, as well as purely mechanical injuries such as aspirated foreign bodies, and penetrating injuries from without, including blows on the chest resulting in fracture of the ribs, may any of them result in a severe hemorrhage. Chronic passive congestion of the lungs, especially that due to mitral disease, may be the cause of bleeding. In mitral stenosis, particularly, the early morning rusty sputum is quite characteristic. Hemoptysis may also occur in young and healthy persons without known cause and without subsequent symptoms. The spongy gums of young girls frequently cause the appearance of blood in the sputum, and vicarious menstruation is sometimes, although rarely, the cause. Hemophilia, leukemia and scurvy may account for the bleeding.

Acute Lymphoid Leukemia.—The duration of the patient's illness in the case cited by Marcellus was about three months. It began with a "general breakdown" with marked weakness. About one month later, the patient developed a dysphagia with dryness of the throat and distress in the upper mediastinum necessitating extreme efforts at swallowing and subsequent loss of appetite. Another month later, he noticed a cervical and inguinal adenitis, and ten days after that he suffered from an attack of acute pain and distress in the left chest and upper left quadrant of the abdomen which he thought was pleurisy. A week later, he noticed further enlargement of the glands in the neck and groin and a diffused petechial and purpural eruption on the skin involving the entire body surface, with some larger areas of discoloration due to superficial hemorrhages on the upper part of the abdomen, bleeding from the mucous membranes of the nose and mouth, and also apparently from the urethra, producing a pronounced hematuria which was probably partially of nephritic origin. He died twenty days later. The pathologic diagnosis was: acute lymphatic leukemia, with generalized hyperplasia of lymphoid tissue throughout the body, and with lymphoid infiltration of the viscera generally; petechial hemorrhages of the skin, serous surfaces, kidneys, bladder and lymph nodes; left serosanguineous hydrothorax with atelectasis of the left lung; leukemic infiltration of bladder with pseudopolypoid fibrous hyperplasia of its mucosa. There was a large tumor mass in the mediastinum simulating lymphosarcoma or chloroleukosarcoma. The hematuria originated in a diffuse polypoid lymphomatosis of the urinary bladder mucosa and also in hemorrhages of the renal pelvis and the uriniferous tubules. Apparently, from a careful search of the literature, no other case with a similar involvement of the mucosa of the urinary bladder has been reported.

Rupture of Aorta.—Gallagher's patient had an aortitis, not syphilitic apparently, which led to aortic regurgitation. He contracted influenza. On the fourth day of hospital residence, the patient, while sitting up in bed, collapsed and died. At the necropsy there was found a ragged laceration through the aorta, just above the valves and within the sac. Above this point, there was an extensive calcification with atheromatous degeneration in the aortic wall. No evidence of aneurysm was found anywhere.

Virginia Medical Monthly, Richmond

53: 419-484 (Oct.) 1926

"Stomach Trouble." J. S. Horsley, Richmond.—p. 419.
Rôle of High Frequency Currents in Treatment of Neoplastic Disease. H. H. Bass, Durham, N. C.—p. 425.
Ureteral Calculi: Forty-One Cases. W. C. Stirling, Washington, D. C.—p. 430.
Factors in Lowering Mortality in Biliary Tract Surgery. L. A. McAlpine, Portsmouth.—p. 435.
Thrombosis of Lateral and Cavernous Sinuses Complicating Acute Mastoiditis: Two Cases. E. G. Gill, Roanoke.—p. 437.
Lobar Pneumonia in Infants and Children: 137 Cases. J. B. Stone, Richmond.—p. 440.
Plea for Closer Relationship Between Physician and Patient. J. M. Miller, Wytheville.—p. 443.
*Causes of Indigestion. T. D. Davis and D. Vanderhoof, Richmond.—p. 446.
Sterility. C. J. Andrews, Norfolk.—p. 448.
Urologic Conditions in Infancy and Childhood. J. F. Geisinger, Richmond.—p. 451.
Etiology of Diseases. E. L. Lowenberg, Norfolk.—p. 455.
Diabetes Mellitus. W. M. Bowman, Petersburg.—p. 459.
Improved Hemorrhoidal Technic. J. B. H. Waring, Blanchester, Ohio.—p. 462.
Modern Medical Clinic. S. McGuire, Richmond.—p. 465.
Historical Notes on Syphilis. T. L. Driscoll, Richmond.—p. 470.

Causes of Indigestion.—The most frequently operating causes of the so-called chronic indigestion among the 4,000 cases analyzed by Davis and Vanderhoof were: appendicitis, 716 cases; cholecystitis, 390; peptic ulcer, 381; neurosis, 682; achylia gastrica, 238; visceroptosis, 517; kidneys, heart and vessels, 313, and lungs, 113 cases. The point is made that every case of indigestion has a definite cause which may or may not be found even after the most painstaking investigation, and that cure cannot be effected unless the particular etiologic factor is corrected.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

23: 165-240 (July-Sept.) 1926

Diagnosis of Cerebellar Tumors in Children. M. Critchley.—p. 165.
*Epiloia. T. Brushfield and W. Wyatt.—p. 178.
*Infantilism as Complication of Congenital Hemolytic (Acholuric) Jaundice or Anemia. F. P. Weber.—p. 185.
*Neoplasm and Infection Theories of Leukemia and Aleukemic Lymphadenoses. F. P. Weber.—p. 189.
*Measles at Confinement, with Subsequent Modified Attack in Child. G. W. Ronaldson.—p. 192.
*Second Attacks of Measles. S. Erdheim.—p. 195.

Epiloia.—The term "epiloia," which was suggested by Sherlock, is applied to the syndrome of mental deficiency, epileptic fits, adenoma sebaceum, nodular sclerosis of the cerebral cortex and tumors of the kidney and other organs. The condition is generally congenital, and females are affected more commonly than males. Brushfield and Wyatt analyze sixteen cases.

Infantilism and Congenital Syphilis.—Weber reports a case of infantilism, complicated by a congenital syphilitic taint, which throws quite another light on the origin of the infantilism.

Neoplastic Theory of Leukemia.—On the whole, it seems to Weber that most of the leukemic diseases may be regarded as malignant neoplastic proliferations of various cellular elements of the blood and blood-forming tissues, and that infection plays a rôle in the etiology of the leukemic diseases similar to that which it plays in the at present acknowledged malignant neoplastic diseases, carcinoma and sarcoma.

Measles in Mother and Infant.—Ronaldson reports the case of a woman who entered the hospital the day after a normal delivery with a typical attack of measles. The baby was a well-developed child, and no pyrexia, rash, Koplik's spots or other evidence of measles were discovered. The child was nursed by the mother. The baby remained healthy. The mother's convalescence was uneventful. The baby was examined daily, but no pathologic condition was apparent till the fourteenth day, when the temperature was 99 F.; the buccal mucosa was injected and Koplik's spots were present. There were slight catarrhal symptoms, occasional cough and sneezing. A coarsely punctate erythema covered the chest and abdomen. The following day the eruption was somewhat blotchy, but could not be described as definitely morbilliform. A few Koplik's spots persisted on the buccal mucous membrane, which was granular in appearance. The temperature was normal, and except for an infrequent cough, catarrhal symptoms had ceased. Extraneous sources of infection could be excluded in respect to the child, as its mother was treated in a two-bed room in an isolation block in a hospital section in which there were no other cases of measles. The term "congenital measles" is not applicable to this case, as the separate existence of the infant was sufficiently long to permit of extra-uterine infection, though infection in utero cannot be altogether excluded. Ronaldson attributes the somewhat prolonged period of incubation, and the rudimentary character of the disease, to the immunizing effect of the maternal milk. The so-called barrier action of the placenta might be the explanation of the probability that the child escaped infection before birth.

Second Attack of Measles.—In both the cases cited by Erdheim, the two attacks of measles occurred about one year apart, each being wholly typical of the disease. The subjects were brothers. The second attack in one case was more severe than the first attack. This is contrary to the generally accepted opinion that the second attack is milder than the first, as was the case with the second patient.

British Journal of Radiology, London

31: 331-366 (Sept.) 1926

Distribution of Radioactivity in Internal Applications of Curietherapy. R. Coliez and L. Mallet.—p. 331.
*Radiotherapy of Pulmonary Tuberculosis. V. Maragliano.—p. 345.
Crossbar-Symptom. Sign of Nicheless Gastric Ulcer Obtained by Roentgenkinography. A. Fraenkel.—p. 349.
*Effect of Roentgen Rays on Tuberculosis of Lungs Associated with Exophthalmic Goiter and Amenorrhea. E. H. Zweifel.—p. 359.

31: 367-408 (Oct.) 1926

Importance of Radiology in Connection with Intrathoracic Surgery. H. M. Davies.—p. 367.
Tumors of Bones; Primary and Metastatic. R. Kienboeck.—p. 374.
Dangerous Art of Palpation. A. E. Barclay.—p. 385.
Technic of Deep Radium Therapy. L. Mallet and R. Coliez.—p. 393.

Radiotherapy of Pulmonary Tuberculosis.—Maragliano tries to imitate with roentgen-ray therapy what is already done with heliotherapy and phototherapy; that is to say, to avoid subjecting the internal organs to the action of the roentgen rays, limiting such action to the skin and bringing under the rays as large a surface of the body as possible. The method appears to be innocuous. In no case did any of the patients undergoing this treatment get worse; on the contrary, their condition either remained stationary or else showed a slight improvement.

Effect of Roentgen Rays on Pulmonary Tuberculosis.—In Zweifel's case irradiation of the spleen produced a stimulating as well as a restraining effect on menstruation. The patient had suffered considerably from an exophthalmic goiter with tremors and tachycardia. Four weeks after the third roentgen-ray treatment, all these symptoms had disappeared. The tuberculosis symptoms were much improved. The coughing nearly stopped, the appetite became normal, and the patient increased in weight. Examination of the lungs showed a great improvement; the hemoglobin increased from 50 per cent to 85 per cent. A very important fact is that the patient was an outpatient, who in no wise changed her mode of living.

British Medical Journal, London

2: 621-670 (Oct. 9) 1926

Science of Clinical Medicine. A. Garrod.—p. 621.
Professional Careers. H. Rolleston.—p. 625.
Cerebral Tumors: I. P. Sargent.—p. 628.
Id.: II. H. S. Souttar.—p. 630.
*Id.: III. A. P. Bertwistle.—p. 631.
*Perforation and Rupture of Gallbladder. L. R. Fifield.—p. 635.
Case of Sarcoma of Lung. R. A. Bennett.—p. 637.
*Persistence of Tubercle Bacilli in Butter from Tuberculous Milk. H. A. Cookson.—p. 637.
*Obturator Hernia. A. J. Blaxland.—p. 638.
*Cardiac Pain in Pernicious Anemia. T. S. Evans.—p. 638.
Sudden Death Due to Acute Hemorrhagic Pancreatitis. A. C. Maconie.—p. 638.
*Local Anesthetic for Ear. F. P. Sturm.—p. 638.
Epinephrine in Cardiac Arrest. M. G. Cardwell.—p. 638.

Localization of Cerebral Tumors.—A method is described by Bertwistle of determining the gyri underlying a cranial defect by means of clinical measurements and a key roentgenogram. Aphasia can be satisfactorily studied, since the parts presiding over the speech mechanism are within its range. Trephining for tumors may be done more nearly over their position once they have been localized clinically. With a long series of cases of trephining accompanied by preoperative or postoperative symptoms, it is hoped to confirm and revise knowledge of cortical function, especially as regards aphasia, so that tumors may be explored with greater certainty.

Rupture of Gallbladder.—Twenty-eight cases of perforation or rupture of the gallbladder are analyzed by Fifield. Cholecystectomy was performed in five cases. The remainder were treated by drainage of the gallbladder and subhepatic pouch; suprapubic drainage was added if diffuse peritonitis was present. Summarized, the treatment is generally drainage of the gallbladder by a tube inserted through the perforation, and drainage of the subhepatic pouch. Suprapubic drainage is sometimes necessary. Cholecystectomy may be performed if the patient's general condition and the local condition of the gallbladder and surrounding tissues do not contraindicate it. Of the four patients operated on soon after perforation, three recovered and one died of shock; seven of the eight patients in whom an abscess had formed recovered, and one died. Fifteen patients were suffering from diffuse peritonitis; ten died (two had localized abscesses in addition) and five recovered. It will be seen, therefore, that when operation was performed soon after rupture, or when an abscess had formed, the prognosis was good, ten out of twelve recovering. On the other hand, when diffuse peritonitis was present, the prognosis was poor, ten out of

fifteen dying. In cases of rupture due to violence, the prognosis depends on concomitant injury to other viscera, the presence of infection in the gallbladder, and the time elapsing between the accident and operation. If the bile is sterile, the last factor is of less importance. In the present series only one case was the result of violence, and the patient recovered, although operation was performed two months after the rupture had occurred.

Tubercle Bacilli in Butter.—With a view to determining the persistence of tubercle bacilli in butter made from milk known to contain them, specimens of milk were collected by Cookson from five tuberculous cows; three of these cows were afterward shown to have extensive tuberculous lesions, and in all five cases the presence of tubercle bacilli in the milk was demonstrated by inoculation into guinea-pigs. One sample of butter made from naturally ripened milk was found to contain tubercle bacilli; the butter produced in other ways from this milk was also found to be similarly infected. The other four samples of milk, whether unheated or heated, produced butter which was free from tubercle bacilli. It would appear that even the most careful pasteurization is not always a sufficient protection against the survival of tubercle bacilli.

Obturator Hernia Diagnosed Before Operation.—In the case cited by Blaxland, there was a palpable swelling in the upper and inner part of the right thigh, 2 inches (5 cm.) below the pubic spine, which enabled a correct diagnosis to be made. This swelling was the result of spread of inflammation beyond the sac wall. Vaginal examination revealed a tense swelling in the right wall of the pelvis at the level of the upper border of the obturator foramen.

Cardiac Pain in Pernicious Anemia.—Evans reports a case of pernicious anemia in which the symptoms of precordial pain and shortness of breath overshadowed for a time the underlying condition of anemia.

Local Anesthetic for Ear.—Sturm uses a mixture consisting of equal parts of cocaine hydrochloride, menthol, crystallized phenol, rectified spirit, and oil of cloves. He claims no originality for the prescription.

Fukuoka Medical Journal, Fukuoka, Japan

19: 39-40 (Aug.) 1926

Determination of Sodium Chloride and Residual Nitrogen in Experimental Nephritis of Rabbits. Y. Morihisa.—p. 39.

19: 45-50 (Sept.) 1926

Pathologic Disturbances of Sense of Smell. T. Yurino.—p. 45.
*Hemolytic Action of Quinine Hydrochloride. M. Maeda.—p. 47.
Haemogregarine of Fresh Water Fish. S. Okada.—p. 50.

Hemolytic Action of Quinine Hydrochloride.—Maeda associates the hemolytic action of quinine, which is given to cure a case of malaria, with the occurrence of blackwater fever, as an etiologic factor.

Heart, London

13: 129-260 (Sept. 29) 1926

*Relation of Pulse Form to Sound Production in Arteries: II. Optical Phono-Arteriograms. J. C. Bramwell and S. K. Hickson.—p. 129.
*Vascular Reactions of Skin to Injury: IV. Pathology of Telangiectases and Allied Conditions. T. Lewis.—p. 153.
*Id.: V. Annular Edema of Skin in Infective Endocarditis. T. Lewis and Y. Zotterman.—p. 193.
*Id.: VI. Some Effects of Ultraviolet Rays. T. Lewis and Y. Zotterman.—p. 203.
*Id.: VII. Anaphylactic Skin Reaction. T. Lewis and R. T. Grant.—p. 219.
Vascular Reactions of Susceptible Skin to Protein. R. Hare.—p. 227.
*Regulation of Coronary Circulation. G. V. Anrep and H. N. Segall.—p. 239.

Optical Phono-Arteriograms.—The Korotkow sounds have been studied by Bramwell and Hickson by an optical graphic method, the recording apparatus consisting of a Frank's capsule with a very delicate rubber membrane and a light mirror. This is connected to a receiver on the brachial artery immediately distal to a pneumatic armlet, the interior of the apparatus being in free communication with the outside air. The natural frequency of vibration of the membranes used was from 240 to 370 a second. The record is named phono-arteriogram.

Vascular Reactions of Skin to Injury.—Experiences bearing on the irresponsiveness of the minute vessels of the skin are described by Lewis, and observations on a number of chosen clinical cases are reported. It is shown that the vessels of the skin which had been injured in a number of ways, by stroking in the susceptible, by freezing, burning, the application of mustard gas, or irradiations from a mercury vapor lamp, are subsequently dilated and the skin becomes more or less edematous. When the edema has subsided, these vessels are found to be in a peculiar condition. They contract imperfectly to the stimulus of epinephrine and pituitary extract, or refuse to contract at all. They are more or less refractory to the stimulus of histamine. A case of erythema ab igne is described, in which the vessels of the affected skin entered the same peculiar state. Several cases of telangiectasis arising out of known injuries, and several arising from unknown causes, are described. The vessels involved vary; in some, the superficial venules are alone dilated; in others, the capillaries are also involved. Two patients with congenital nevus are similarly examined. In all these cases the affected vessels are found to be more or less irresponsive to vasoconstrictor substances and to histamine. The same statement applied to diffuse telangiectasis of the weather-beaten face and to leashes of venules on the chest wall. It is argued that the vessels comprising telangiectases (and congenital nevi) have become dilated because they have lost their contractile power; and that the peculiar condition of these vessels is similar to or identical with that which occurs immediately or soon after actual injury.

Annular Edema of Skin in Infective Endocarditis.—An instance of annular edema, occurring in a case of infective endocarditis, is described by Lewis and Zotterman, and an attempt is made to explain the mechanism through which such annular edema is developed. The authors encourage a more detailed study of cutaneous lesions of this and allied varieties, along lines which follow recent observations on the physiology of the vasculature of the skin.

Reaction of Cutaneous Vessels to Ultraviolet Rays.—Lewis and Zotterman assert that the reaction of the cutaneous vessels to ultraviolet rays consists essentially of three parts: a local and active vasodilatation; a reflex dilatation of the muscular arterioles (in little evidence) and, locally, increased permeability of the vessel walls. This triple reaction appears to be common to all forms of tissue injury so far examined. The vasodilator substances produced by ultraviolet irradiation of the skin diffuse into the surrounding skin and are conducted away by lymphatic channels. A similar event happens in the case of skin injured by freezing. The underlying cause of the vascular reactions following ultraviolet irradiation is identical with that produced by injuries yielding quicker reactions; namely, the liberation of substances having a histamine-like action.

Anaphylactic Skin Reaction.—An instance of urticaria, in which a sensitivity to fish was prominent, is described by Lewis and Grant. The skin of this patient reacted to highly dilute extract of herring, but was not abnormally susceptible to mechanical injury or to histamine. The anaphylactic skin reaction was found to resemble precisely the skin reaction resulting from injuries of various kinds and that produced by histamine. The fish substance responsible for the anaphylactic skin reaction appeared to be associated chiefly with nucleic acid; and in this susceptible patient was about 170 times as active as histamine itself. It is argued that the anaphylactic poison acts on the skin by liberating in it a histamine-like substance.

Regulation of Coronary Circulation.—The peripheral and nervous regulation of the coronary circulation has been studied by Anrep and Segall in the denervated and innervated heart-lung preparation. In the denervated heart, the arterial blood pressure is the only mechanical factor which determines the coronary circulation. Neither a change in the heart rate nor in the strength of the cardiac contraction, as produced by changes in the stroke output, have any influence on the coronary flow per minute. In the innervated heart, the coronary blood flow is determined also by the minute output of the heart. An increase in the output is accompanied by an augmented coronary flow. This effect is

of reflex origin, and is independent of the simultaneous changes in heart rate and strength of contraction; it disappears after section of both vagi. Section of the vagi is followed by a considerably augmented coronary flow. Stimulation of the vagi, while the heart rate is controlled, produces a diminished coronary flow. The experiments demonstrate the presence of vasoconstrictor fibers to the coronary blood vessels in the vagi, and of vasodilator fibers in the sympathetic nerve.

Journal of State Medicine, London

34: 559-620 (Oct.) 1926

*Rheumatic Child. A. P. Thomson.—p. 559.
Sequelae of Lethargic Encephalitis in Children. V. Saunders-Jacobs.—p. 565.
Estimation of Carbon Monoxide in Air of Workshops. F. Schoofs.—p. 575.
Antenatal Organization. Barrett.—p. 578.
Health Certificates on Marriage. S. Churchill.—p. 585.
Psychology of Woman Worker. S. Bevington.—p. 589.
Problem of Illegitimate Child. H. A. L. Fisher.—p. 596.
Racial Culture. I. H. Pearse.—p. 603.

Rheumatic Child.—The rheumatic state in childhood, Thomson states, is a condition which frequently exists without any clamant symptoms of ill health; nevertheless, it is dangerous, for it leads to serious diseases of the heart. As the result of rheumatism acquired in childhood, about 30,000 people die each year in this country from heart disease. Their deaths are preceded often by long periods of suffering and invalidity. Further, the rheumatic state deprives many children of the advantage of normal education. Two important factors in the production of the disease are poverty and damp: until these factors are dealt with, rheumatism in children will probably continue. A great deal can be done to mitigate the consequences of rheumatism if the diagnosis is made early, and suitable accommodation is provided for the patients.

Kenya Medical Journal, Nairobi, East Africa

3: 151-180 (Sept.) 1926

*Modification of Sachs Georgi Flocculation Test for Syphilis and Allied Diseases. D. L. Webb.—p. 151.
Disease of African Natives Suggestive of Scurvy. C. J. Wilson.—p. 157.
Finding of Embadomonas Intestinalis in Kisii Native. J. C. J. Callanan.—p. 170.
Gonococcal Abscess in Wall of Uterus Simulating Ovarian Tumor. H. A. Cole.—p. 171.
*Recovery After Apparent Death. H. M. Shelley.—p. 174.

Modification of Sachs-Georgi Test.—The test used by Webb consists of adding 1 cc. of a 1:11 emulsion of cholesterinized heart extract in 0.9 per cent saline solution (the antigen) to 0.2 cc. of fresh active patient's serum, and leaving it at room temperature for from sixteen to twenty-four hours. It is stated that the test can be performed after a little practice by any one even without previous knowledge of laboratory technic, and that it relies for its performance on simple apparatus to be found anywhere. More than 5,000 tests have been performed with satisfactory results. The degree of accuracy of the test with the Wassermann reaction is high. The utmost confidence can be placed on a positive reading. The negative reading cannot be regarded as useful for diagnostic purposes.

Recovery After Apparent Death.—Shelley reports the case of a woman whose throat had been cut with murderous intent. When he saw her, life was apparently extinct; the woman was not breathing and there were no signs of heart action to be obtained. Three hours later the body arrived at the mortuary for a necropsy. As the work was about to be undertaken, it was noted that the woman was breathing slowly and deeply, and a quick, thready pulse was palpable in the radial artery. All cut vessels in the neck were tied immediately; a tracheotomy tube was inserted into the cut trachea, and saline solution was administered intravenously. Within thirty minutes, the woman regained consciousness. However, she died from asphyxia ten hours after Shelley first saw her. The woman had been apparently dead for six hours previous to receiving treatment, and she revived in spite of the fact that the left carotid and left superior thyroid arteries, the left internal and external jugular veins and the trachea had been severed completely.

Lancet, London

2: 687-734 (Oct. 2) 1926

Functions of School Clinic. H. Rolleston.—p. 687.
Functions of Biliary Passages in Relation to Their Pathology. D. P. D. Wilkie.—p. 689.
Tryparsamide Therapy in Neurosyphilis. J. D. Silverston.—p. 693.
Treatment of General Paralysis by Tryparsamide. M. Brown and A. R. Martin.—p. 699.
*Poradenitis, or Subacute Lymphogranulomatosis. A. T. Todd.—p. 700.
*Results of Thoracoplasty in Phthisis. J. Gravesen.—p. 702.
*Action of Glyceric Aldehyde and Dihydroxyacetone on Insulin Hypoglycemia. J. A. Hewitt and H. G. Reeves.—p. 703.

Poradenitis: Lymphogranulomatosis.—Todd is of the opinion that this disease, though uncommon, appears to be spreading, and that unless it is kept in mind, difficulty may occur in distinguishing it from conditions which have a different prognosis and require other treatment. It is possible that some of these cases are being classified as tuberculous adenitis, chronic lymphadenitis, syphilis, or lymphadenoma, but although there are resemblances there should be no difficulty in the separation of these cases. Todd reports two cases.

Thoracoplasty in Phthisis.—Gravesen discusses the results of thoracoplasty on the basis of an experience with this operation in 157 cases. Only six of these patients have not been discharged. Of the remaining 151, thirty-six patients were discharged as much improved; sixty-seven were improved; in twenty-one the condition remained stationery or was worse; twenty-seven are dead. Twelve of the deaths constitute the operation mortality, or 7.6 per cent. Report was received on 131 patients from one to ten years after operation. Thirty-four were fit for ordinary work, nineteen for easy work; fifteen were unfit for work; there were fifty-nine deaths from tuberculosis, including operation deaths, and four deaths from other diseases.

Treatment of Insulin Hypoglycemia.—In mice, and in rabbits rendered hypoglycemic by insulin, Hewitt and Reeves assert that such hypoglycemia is relieved by dihydroxyacetone and is not relieved by glyceric aldehyde. The hypoglycemic rodent cannot effect the conversion of glyceric aldehyde to dihydroxyacetone. It is suggested that dihydroxyacetone is a probable intermediate in the metabolism of carbohydrate.

Naval Medical Association Bulletin, Tokyo, Japan

15: 5-9 (Sept.) 1926

Cholera Specific Medium, Hemoglobin Extract-Soda-Agar. T. Kabeshima.—p. 5.
Removal of Moisture and Carbon-Dioxide in Air of Room. K. Moteki.—p. 8.
*Examination of Men Working in Printing and Copper Departments of Naval Gunpowder Mill. F. Harada.—p. 8.
Comparative Study of Meinecke's Turbidity Reaction and Method of Dujarric de la Rivière and Gallerand with Wassermann's Reaction. C. Suzuki and C. Matsushita.—p. 9.

Lead Poisoning Among Gunpowder Makers.—Of seventeen men in the copper department and six in the printing department of a gunpowder mill who were examined by Harada for lead poisoning, nineteen, or 88.24 per cent, had slight symptoms of lead poisoning (decay of teeth and appearance of basophilic granular red blood cells).

Sei-I-Kwai Medical Journal, Tokyo, Japan

45: 1-10 (Aug.) 1926

Pathologic Anatomy of Experimental Trypanosomiasis of Horse. T. Kimura, T. Fukushima and T. Fujii.—p. 1.
Pharmacologic Value of Synthetic *l*-"Epinephrine-Ciba." T. Yokota and T. Tagaya.—p. 6.
Glycogen in Central Nervous System of Birds: III. C. Koyanagi.—p. 7.
Case of Lymphogranulomatosis. K. Sonobe.—p. 9.

South African Medical Record, Cape Town

24: 397-416 (Sept. 25) 1926

Diathermy in Treatment of Pelvic Inflammatory Conditions in Women. R. L. Impey.—p. 399.
Some Modern Methods of Treatment of Upper Air and Food Passages. C. E. Jones-Philipson.—p. 400.
Surgery of Stomach and Duodenum. C. F. M. Saint.—p. 403.
Action of Sun and Air Baths. J. D. M. Claassens.—p. 405.
Some Bilharzia Cases. S. Kohn.—p. 407.
Case of Skin Plastic Operation for Mucous Membrane Replacement in Mouth. G. J. C. Smythe.—p. 408.

Bulletins de la Société des Hôpitaux, Paris

50: 1463-1505 (Oct. 22) 1926

Syndrome of Irritation of Occipital Cortex. H. Baruk and J. Dereux.—p. 1463.
Amyotrophia Following Serum Treatment. A. Léri and A. Escalier.—p. 1468.
*Action of Insulin on Vascular Diseases. L. Ambard et al.—p. 1474.
Tuberculosis of Pericardium in an Adult. M. Renaud and Chatagnon.—p. 1478.
Thrombophlebitis from Colon Bacillus. J. Cathala and Chabrun.—p. 1480.
Pyelonephritis of Pregnancy. L. Ribadeau-Dumas and Chabrun.—p. 1487.
Myelitis with Miliary Tuberculosis. Cristau and Poumeau-Delille.—p. 1494.
Intermittent Jaundice. Brulé.—p. 1497.

Effect of Insulin on Vascular Diseases.—Ambard, Boyer and Schmid treated a diabetic woman who presented an intense cyanosis of the legs and feet in the course of coma. Under insulin treatment the condition improved rapidly, and the cyanosis disappeared. On reduction of the dose of insulin and reappearance of sugar and acetone in the urine, a violent pain occurred in the legs. Under sufficient amounts of insulin, the pain and trophic disturbances were checked, and the menacing gangrene was averted. Insulin was then tried in the case of a young physician who had suffered for about three years from progressive intermittent claudication with atrophy of the muscles of both lower limbs. The first injection of insulin gave notable relief. The injections, each of 10 units, were given daily, for six months. The treatment has been continued to date, a period of several months more, but it has been less regular. Pain and paresthesia have almost disappeared, the sensation of cold in the feet is gone. The nutrition of the skin has become normal and the muscular atrophy is apparently improving. In the last two weeks he has been able to walk considerable distances. Nevertheless the macroscopic condition of the arteries has not changed; namely, one dorsalis pedis is still completely obliterated. The pulsations in the posterior tibial are, as before, hardly perceptible.

Gynécologie et Obstétrique, Paris

14: 145-208 (Sept.) 1926

*Surgical Intervention During Pregnancy. A. Brindeau and C. Juge.—p. 145.
Henkel's Treatment of Postpartum Hemorrhages. G. Muller.—p. 151.
Displacement of Uterine Mucosa. C. Waegeli.—p. 158.

Surgical Intervention During Pregnancy.—Brindeau and Juge do not hesitate to perform an operation during pregnancy, when it is necessary. They give the statistics of Tarnier's Clinic in Paris, including 113 operations on women, pregnant from one to eight months. In thirteen the pregnancy was interrupted, two developed thrombophlebitis. The mortality was 2.55 per cent. The operations were done under chloroform or ether. After the operation, four injections of morphine, each of 0.01 Gm. were given daily, for four days. Operations on the external genital organs seem more liable to interrupt pregnancy than do others. Therefore, it is advisable to postpone these until after delivery.

Journal de Chirurgie, Paris

28: 257-368 (Sept.) 1926

Treatment of Epithelioma of Upper Jaw with Surgery Plus Radium. A. Hautant et al.—p. 257.
Technic for Reduction of Fracture of Neck of Femur. M. Ducroquet, Jr.—p. 275.

Journal d'Urologie Médicale et Chirurgicale, Paris

22: 177-256 (Sept.) 1926

Fixation of Complement Reaction in Gonorrhea. S. Iaskolko.—p. 177.
Bordet-Gengou Reaction and Immunization in Gonorrhea. P. Timoféeff.—p. 189.
Connection of Right Kidney and Appendix in Disease. M. Laquière.—p. 212.
Diathermy in Treatment of Gonorrhea. M. Mackintosh.—p. 233.
Case of Congenital Extrophy of the Bladder. E. Estor.—p. 242.
*Sarcoma of the Prostate in Infant. M. Laquière and R. Bouchard.—p. 244.

Sarcoma of the Prostate in an Infant.—Laquière and Bouchard report a case of sarcoma of the prostate in a child, aged 9 months, presenting urinary disturbances similar to those in prostatic enlargement. Clinical and endoscopic examination suggested the diagnosis of metastatic abscess following infection from lesions of impetigo. On incision of the prostate and biopsy the condition appeared to be sarcoma. This diagnosis was confirmed at necropsy. Four illustrations are given.

Nourrisson, Paris

14: 265-328 (Sept.) 1926

Children's Clinic in Lausanne. Taillens.—p. 265.
*Stridor from Syphilitic Hypertrophy of Glands. A. B. Marfan and J. Debray.—p. 285.
Myocardium in Congenital Syphilis. R. Dupérié and G. Cantorné.—p. 298.

Stridor from Syphilitic Enlargement of Tracheobronchial Glands.—At the age of 3 months, the girl in Marfan and Debray's case presented craniotabes, soon followed by other typical rachitic lesions. A month later she developed an expiratory stridor which was not influenced by change of position, closing the mouth or nose or by sleep. Roentgenograms showed enlargement of the glands in the region of the right hilum. The tuberculin reaction was negative. Under ultraviolet rays and especially under neoarsphenamine and mercury treatment, the general condition greatly improved, but the stridor persisted until the age of 16 months. At the age of 20 months the child died from measles complicated by bronchopneumonia. At necropsy, the glands around the trachea and bronchi were found much enlarged. Tuberculous lesions were not present, but syphilitic sclerosis was evident. The stridor had been caused by compression of the trachea and right bronchus by the hypertrophied glands. The thoracic deformity from rickets was a contributory factor.

Presse Médicale, Paris

34: 1329-1344 (Oct. 23) 1926

*Paroxysms of Arterial Hypertension. H. Vaquez and E. Donzelot.—p. 1329.
Hyperpnea and Cerebrospinal Reflexes. S. Draganesco.—p. 1331.

Case of Paroxysmal Arterial Hypertension.—The paroxysms observed by Vaquez and Donzelot occurred in a man, aged 37, whose blood pressure was usually approximately normal. The paroxysms started with pain and cramps in the lower limbs, gradually succeeded by abdominal colic, pain in the chest, similar to that in angina pectoris, and finally a violent headache. They lasted from five to ten minutes. At first they occurred once in three weeks, later several times a day, following emotion or exertion, sometimes without apparent cause. They were never preceded by clinical signs. Irritation of the splanchnic nerve and increase of epinephrine in the blood are the most probable causes for disturbed regulation of arterial tension. It is possible that in this case there are changes in the suprarenal medulla which result in an increase of epinephrine in the blood, but such changes are not yet clinically evident. Besides intermittent albuminuria, hemorrhage in the retina and acute edema of the lung have occurred. This renders the prognosis grave.

34: 1345-1360 (Oct. 27) 1926

*Clinical Importance of Local Immunization. A. Besredka.—p. 1345.
Hyperhidrosis of the Face. A. Trioumphoff.—p. 1350.
Remote Results of Resection of Elbow. J. Sénèque.—p. 1351.

Local Immunization and Its Clinical Significance.—Besredka presents statistics showing the results of his method of local immunization by the mouth or by the skin. Among 28,000 persons in Lodz (Poland), inoculated with antityphoid vaccine by the mouth, the morbidity was 0.15 per cent, while among the unvaccinated it was nine times as great. During a recent epidemic in India, about 1,200 prisoners were given antidysenteric vaccine by the mouth. The morbidity among these was half what it was among the unvaccinated. Similar results were recorded in Greece, Russia and Japan. One hundred and seventeen dysentery patients in Nisch, Serbia, were treated with vaccine by the mouth. Of these, 111 were well at the end of four or five days; one died; in five the treatment was without effect. Approximately the same results were obtained in Leningrad. Preventive oral vaccination against cholera was used on 5,200 persons in India. Only two died; in these the disease was probably already in the period of incubation when they were vaccinated. As to what can be obtained from skin immunization, Besredka cites the

following examples. About 9,000 horses and mules were vaccinated by this method during an epizoötic of anthrax. The mortality was one-twentieth of that of the five preceding years. In Morocco over half a million similar vaccinations were made on cattle. The immunization proved to be rapid and durable. Besredka lists the diseases for which vaccination in the form of irrigations, instillations or dressings to the skin or mucosa has been successfully employed. He is convinced that many postoperative complications can be averted if the surgical field and material, as well as the surgeon's hands, are thoroughly washed with vaccine (antivirus). After the operation vaccine may be used for irrigation of the severed tissues.

Revue Neurologique, Paris

33: 209-280 (Sept.) 1926

Dementia Praecox in Young Children. G. Halberstadt.—p. 209.
*Iron in the Brain of the Insane. C. Trétiakoff and O. Caesar.—p. 220.
Contralateral Reflex of Adductors. O. Balduzzi.—p. 243.

Iron in the Brain of the Insane.—An estimation of the iron in the cortex of the brain and cerebellum was made by Trétiakoff and Caesar in twenty-one persons, who had suffered from various mental diseases. Ammonium sulphydrate was used as reagent. The reaction was intense in general paralysis, faint in epilepsy, alcoholism and feeblemindedness. It was variable in cases of manic depressive insanity, dementia praecox or paranoia. The characteristic iron coloration was sometimes the same in the cortex of the brain and in that of the cerebellum, also in the cerebellar peduncles. Usually it was more pronounced in a certain region of the brain, chiefly the frontal lobe, which evidently corresponded to the main location of the lesion.

Schweizerische medizinische Wochenschrift, Basel

56: 921-944 (Sept. 25) 1926

*Heart Regulation by Liver Hormone. L. Asher.—p. 921.
*Tests for Ethylalcohol. F. Schwarz.—p. 923.
Constitution, Function and Norm. M. v. Arx.—p. 929.
Purity of Arsphenamine. W. Kolle et al.—p. 934.
Preventive Mental Hygiene. G. Ichok.—p. 935.
Treatment of Sciatica. A. Goenner.—p. 938.

Heart Regulation by Liver Hormone.—Asher reviews the investigations made by his school on the action of perfusing fluids and extracts of the liver on the heart. The latest investigations made it probable that the changes produced are due to cholates. In high dilutions they increase the strength of the heart beat and slow the pulse. In still lower concentrations the heart beats increase in strength as well as in frequency. The biliary acids act as antagonists of acetylcholine and reverse the action of atropine. The latter facts are of especial importance for the general mechanism of action of hormones.

Tests for Ethyl Alcohol.—Schwarz reviews the methods of the medicolegal determination of alcohol in blood, urine and brain and discusses the manifold sources of error. He pleads for a more cautious taking of case histories, since any of them might be taken into court, and a remark on alcohol intoxication based on mere impressions might injure the patient's legitimate interests.

Policlinico, Rome

33: 1309-1343 (Sept. 20) 1926

Infant Feeding. L. Spolverini.—p. 1309.
Quinidin in Tachycardia. A. Sebastiani.—p. 1314.
Intracardiac Injection of Epinephrine. E. Buzi.—p. 1317.
*Diaphragm Function Test. F. Parodi.—p. 1320.
Protective Cap. E. M. Poletti.—p. 1321.

Diaphragm Function Test.—Parodi places his thumb and index finger above the thyroid cartilage of the recumbent patient. In healthy subjects the cartilage is drawn down in the middle line during a deep inspiration. With paralysis of one half of the diaphragm the cartilage is drawn toward the healthy side.

39: 1345-1379 (Sept. 27) 1926

*Epidemic of Malta Fever. A. Alessandrini and C. Enrico.—p. 1345.
*Hematuria in Appendicitis. E. Sciaky.—p. 1353.
Fatal Lupine Poisoning. M. Petraroia.—p. 1356.
Physiognomy. G. Rolle.—p. 1357.

Epidemic of Malta Fever.—Alessandrini and Enrico investigated the malta fever endemic in Affile near Rome, a town of 1,885 inhabitants who live under extremely unhygienic and dirty conditions. The malta fever was preceded by an alarming frequency of abortion in goats (not in cattle). Not much can be done to stop the epidemic.

Hematuria in Appendicitis.—In one of Sciaky's patients hematuria persisting for three years discontinued two days after appendectomy.

Brazil-Medico, Rio de Janeiro

2: 175-188 (Sept. 25) 1926

Filtrable Types of Tuberculous Virus. A. Fontes.—p. 175.
*Intestinal Intussusception. V. Baptista.—p. 178.

Intestinal Intussusception in Children.—Baptista points to twelve cases since 1921 to show how prevalent this condition is. Apparent well-being should not mislead. In one infant, the pediatrician diagnosed invagination, and rectal examination brought forth pure blood; the surgeon however, postponed intervention, as the general condition seemed good. In a few hours an emergency operation was performed, but too late.

Gaceta Médica de México, Mexico City

57: 529-626 (Sept.-Oct.) 1926

Urine Examination for the Tubercle Bacillus. F. Paz.—p. 529.
Blood Chemistry and Transfusion. H. Ayuso y O'Horibe.—p. 533.
Early Organotherapy. M. Cordero.—p. 541.
Modern Legal Medicine. J. Torres Torija.—p. 547.
*Monardes and American Materia Medica. N. León.—p. 553.
Digitalis from the Garden. J. M. Noriega.—p. 569.
Treatment of Uterine Fibromyomas. J. Villarreal.—p. 574.
*Protracted Pregnancy. D. López.—p. 583.
*The Thoracometrograph. D. Vergara Lope.—p. 588.

Monardes and American Medicine.—León recalls that Nicolás Monardes (1512-1588) of Seville was the first physician to study the properties of a number of Mexican plants. His book (1563) went through several editions and was translated into a number of languages. He organized a natural history museum and devoted much time to growing American plants in his gardens.

A Case of Protracted Pregnancy.—In the case reported, the last menstrual period was on Feb. 25, 1920. By March 15 morning sickness was occurring. In July the fetal heart could be heard. Delivery took place on Feb. 10, 1921, i. e., 352 days from the last period and probably 344 from the coitus which resulted in the conception.

Device for Measuring the Chest.—Illustrations show the apparatus used by Lope for measuring the chest and recording the measurements made.

Revista de la Asoc. Médica Argentina, Buenos Aires

39: 323-471 (July-Aug.) 1926

Temporary Osteosynthesis. F. Z. Guerrini.—p. 323.
Adenocarcinoma of the Cecum. A. A. Alsina.—p. 335.
*Duodenal Drainage in Diagnosis of Gallstones. M. R. Castex and J. C. Galán.—p. 350.
Fragility of Blood Cells and Bilirubinemia in Various Forms of Erythrocytosis. P. Escudero and E. Fernández Ithurrat.—p. 365.
Sedimentation Speed in Erythrocytosis. P. Escudero and E. Fernández Ithurrat.—p. 374.
*Internal Secretion of Genital Organs and Energy Requirement. M. R. Castex and M. Schteingart.—p. 389.
*Methods for Estimating Hemoglobin. E. M. Fernández Ithurrat and V. Morera.—p. 401.
Scurvy in Children. F. Schweizer.—p. 427.
Jacksonian Epilepsy from Cerebral Gliosis. M. Alurralde and M. J. Sepich.—p. 434.

Biliary Drainage in the Diagnosis of Gallstones.—In a series of cases the data furnished by drainage of the biliary tract were used by Castex and Galán, to confirm the presence of gallstones. In eight confirmed cases, the most uniform finding was an appreciable precipitate of cholesterol and biliary salts and pigments in the several bile fractions, but specially in the B specimen. This happened with drainage both by pituitary extract and by magnesium sulphate. Atypical reactions are very common, specially in cases of sclerosis or blocking of the cystic duct by a stone.

Internal Secretion of Genital Organs and Basal Metabolism.—In forty cases of endocrine insufficiency of genital organs, a study of the basal metabolism was made by Castex and Schteingart. In eighteen women both ovaries had been

removed and there were symptoms from loss of ovarian function. There was an increase in the basal metabolism of from +10 to +36 per cent in fifteen patients, some of them in the menopause age, seven with goiter. In eighteen basal metabolism proved normal. These included a number of women castrated long before, several obese patients and women in the menopause. In a case of infantilism and testicular aplasia and in one of testicular atrophy, the basal metabolism was entirely normal. Insufficiency of the endocrine function of the genital organs does not of itself lower basal metabolism. Antagonism in regard to metabolism was noted between the thyroid and the genital organs. Genital gland extracts did not raise basal metabolism.

Computation of Blood Hemoglobin.—At present the most accurate recording of the amount of hemoglobin, according to Fernández Ithurrat and Morera, is by the van Slyke-Stadie method, especially with the latest improvements. It requires, however, 1 or 2 cc. of oxalated blood, and this prevents its general use. Of the Sahli-Seitz, Newcomer and Burker colorimeters, the most accurate is Burker's, but his method is too elaborate and expensive. Newcomer's comes next and is far simpler. If one must use Sahli's method, the authors advise Seitz' modification, read as if it were Sahli's original device. The content of hemoglobin ought to be recorded everywhere in grams per hundred cubic centimeters, to save confusion. In Argentina the following standards may be accepted provisionally: men, 15.65 Gm.; women, 13.5 Gm. Blood cells: men, 5,400,000; women, 4,800,000.

Revista Médica Latino-Americana, Buenos Aires

11: 2053-2240 (Sept.) 1926

*Puerperal Infection and Malignant Endocarditis. F. R. Ruiz and P. P. Piñero García.—p. 2053.
Basal Metabolism in the Prognosis of Pulmonary Tuberculosis. G. Bosco.—p. 2077.
Clinical Importance of Vestibular Nystagmus. P. L. Errecart.—p. 2083.
Treatment of Tumors of the Bladder. J. J. Gazzolo.—p. 2105.
*Diagnosis of Malignant Tumors. H. Gotta.—p. 2116.
Regional Anesthesia of the Brachial Plexus. J. A. Caeiro.—p. 2123.
Kaufmann's Chondrodystrophic Nanism. S. G. Beyrne.—p. 2128.
*Cardio-Aortic Syphilis with Adams-Stokes Syndrome. L. de Marval and D. Vivoli.—p. 2163.
Inflammatory Tumor of the Mesocolon. J. Diez and P. A. Etchegorry.—p. 2177.
Samocrysin in Pulmonary Tuberculosis. J. F. Mieres and A. Cetrangolo.—p. 2181.
*Rubino's Leprosy Test. V. Castro Paullier and L. Errecart.—p. 2197.

Puerperal Fever and Malignant Endocarditis.—The study of 402 out of 447 fatal cases of puerperal fever revealed eight cases of secondary malignant endocarditis, i. e., 1.99 per cent. The puerperal mortality at Rosario (1900-1925) is 1.71 per thousand births. Labor and abortion share the responsibility about equally. In the cases of endocarditis, the streptococcus was usually the infecting agent. Seven of these cases ended fatally after, on the average, twenty days. In two a persistent ductus arteriosus apparently favored the spread of the infection.

Blood Sugar in Cancer.—Gotta determined the fasting blood sugar in thirteen control cases and forty-five cases of cancer of all types and organs. The controls showed 0.96 per thousand and 0.16 after standing in the incubator at 37 C. for twenty-four hours; the cancer cases, 0.98 and 0.19, respectively. These results tend to disprove Ramond's contentions as to changes in glycolysis in malignant cases.

Cardio-Aortic Syphilis with Adams-Stokes Syndrome.—The cardiac manifestations appeared suddenly in this case, twenty-five years after the original chancre. The patient died within six months without showing any sign of heart failure. The cardiac block occurred only twelve days before death. Toward the end, the attacks were practically continuous, with alternating bradycardia and tachycardia. Pictures, one in colors, show the histologic changes.

Failure of Rubino's Test for Leprosy.—The method suggested by Rubino for the diagnosis of leprosy by the aid of blood cells treated by formaldehyde was tried on five controls and seventeen lepers. The results were unsatisfactory, the test proving positive with some nonleprous and negative with some leprous serums. The effect may be a mere agglutino-sedimentation.

Semana Médica, Buenos Aires

33: 833-904 (Sept. 30) 1926

Charcot's Disease of Pseudopolyneuritic Type. J. C. Montanaro and J. L. Hanón.—p. 833.
Leukocytes in Malarial Anemia. J. R. Goyena.—p. 838.
Immunohemotherapy and Vaccinohemotherapy. J. Melfi.—p. 853.
Epinephrine Secretion. E. A. Molinelli.—p. 870.
Constitution of Children. A. Navarro.—p. 873.
Thoraco-Abdominal Silhouettes of Children. J. P. Garrahan.—p. 878.
Artificial Pneumothorax and Tuberculosis. F. R. Torres.—p. 880.
Ultraviolet Rays in Tuberculosis in Children. C. Carreño.—p. 884.
*Ether Therapy per Rectum in Whooping Cough. H. Magliano.—p. 887.
Plans for Tuberculosis Sanatoria. J. A. Saralegui.—p. 889.

Enemas of Ether in Whooping Cough.—Magliano says that ether (20 per cent) in olive oil has proved beneficial in all forms of whooping cough, at all ages. The ten patients reported were from 1 to 7 years old. The method can also be used for prevention. The dose was 5 to 10 cc.

Biochemische Zeitschrift, Berlin

176: 251-502 (Sept. 22) 1926. Partial Index

*Manoïlow's Reaction and Determination of Sex. G. Alsterberg and A. Håkansson.—p. 251.
*Physiology of Glands. T. Okumura.—p. 291 and 325.
*Idem. N. Scheinfinkel.—p. 341.
Effect of Neutral Salts on the Cell. F. Boas.—p. 349.
Creatine and Metabolism. F. Lieben and D. László.—p. 403.
Sugar Formation from Methylglyoxal. B. Sjollema and L. Seekles.—p. 431.
*Blood Reaction and Ventilation of Lungs. R. Ege and V. Henriques.—p. 441.
Effect of Carnosin on Gastric Secretion. R. Krimberg and S. A. Komarow.—p. 467.
Acid and Taste Sensations. E. Baráth and J. Vándorfy.—p. 473.
Phosphoric Acid in Blood. F. Roller.—p. 483.
A Chemical Difference Between Male and Female Blood. A. Klisiecki.—p. 490.

Manoïlow's Reaction and Determination of Sex.—Alsterberg and Håkansson show that the positive or negative reactions in Manoïlow's test depend upon the presence of a greater or less amount of organic substances in the substratum. If more reducing substances are present the dye will be protected from the action of permanganate, and the result is a colored product (female reaction). With a surplus of the permanganate the dye will be oxidized and a colorless product obtained (male reaction). The reaction is of a quantitative nature.

Reciprocal Action Between Thyroid Gland and Insulin.—Okumura found that insulin inhibited to a certain extent the stimulating effect of the thyroid on metabolism. It seemed that insulin had also a regulating influence on protein and fat metabolism.

The Function of the Spleen and Iron Metabolism.—Scheinfinkel found an increase of 60 per cent in the iron content of the liver of the guinea-pig after extirpation of the spleen. None of the animals were anemic. The increase began three days after the extirpation.

Blood Reaction and Ventilation of the Lungs.—In experiments on rabbits, dogs and human subjects Ege and Henriques found that lack of oxygen caused a considerable increase in the ventilation of the lung and a displacement of the blood reaction toward the alkaline side. Respiration of air containing more than 20 per cent of carbon dioxide abolished the excitability of the lung. The hydrogen ion concentration of the blood was 7.15 in normal rabbits; after injection of acid it was about 6.8, and on respiration of 75 per cent carbon dioxide about 5.6.

Deutsches Archiv für klinische Medizin, Leipzig

152: 113-256 (Aug.) 1926

*Effect of Cholin on Blood Circulation. E. Schliephake.—p. 113.
Human Blood in Experimental Malarial Infection. E. Wiechmann and H. Horster.—p. 136.
Ehrlich's Diazo-Reaction. L. Hermanns.—p. 153.
Lipase in Gastric Secretion. F. Delhougne.—p. 166.
*Spontaneous Hypoglycemic Coma. T. Stenström.—p. 173.
Reticuloendothelial Reaction. H. Krahn.—p. 179.
Observations on Scarlet Fever. K. Benjamin.—p. 202.
*Insulin and Nitrogenous Susbtances in Urine. F. Zinsser.—p. 219.
Infections and Sclerosis of Heart Valves. E. Uehlinger.—p. 227.
Chemistry of Sputum. A. Kubasch.—p. 247.

Effect of Cholin on Human Blood Circulation.—Schliephake studied the effect of cholin on the blood circulation of healthy subjects and of patients suffering from cardiac diseases. It

caused a retardation in the formation and conduction of stimuli and promoted heterotopic impulses. In disturbances of the cardiac function a partial or total blocking was obtained. Injection of cholin may prove useful as a functional test, as rhythmic changes were observed only in patients with myocardiac disturbances. Cholin also caused a decrease in the blood pressure, especially in arterial hypertension and in cases with contracted kidneys. Patients with thyrotoxic symptoms reacted very slightly to cholin.

Spontaneous Hypoglycemic Coma.—Stenström reports the case of a married woman, aged 34, who, two months after she had recovered from an acute kidney disease, suddenly developed coma. Previously her blood pressure had been low, sometimes less than 100, which suggested insufficiency of the suprarenals. The condition returned nearly to normal after injection of 1 mg. of epinephrine. The rigidity of the extremities disappeared almost completely. The blood sugar was 0.035 per cent. After subcutaneous infusion of dextrose and repeated injections of epinephrine the temperature reached normal, the blood sugar increased to 0.08 per cent and the patient was able to leave the hospital.

Effect of Insulin on Excretion of Nitrogenous Substances in Urine.—In examinations of the urine of five healthy persons Zinsser did not observe any effect from insulin on the excretion of total nitrogen or amino-acid nitrogen and substances which reduce copper oxide.

Klinische Wochenschrift, Berlin

5: 1809-1856 (Sept. 24) 1926

Low Blood Pressure. P. Martini and A. Pierach.—p. 1809. Ct'd.
*Galvanic Nystagmus. M. Rosenfeld.—p. 1815.
Does Treatment in Dairies Influence the Antiscorbutic Action of Milk? E. Seligmann et al.—p. 1818.
*Experimental and Clinical Studies of Streptococcus Infection. S. Kwasniewski and N. Henning.—p. 1822.
*Measles Serum from Animals. A. Schlossmann.—p. 1824.
*Exsiccosis and Carbohydrate Metabolism. E. Schiff and K. Choremis. —p. 1826.
Traumatic Parkinsonism. H. W. Maier.—p. 1827.
Treatment of Acro-Angioneuroses. J. Borak.—p. 1830.
Sanocrysin in Recurrens. W. Krantz.—p. 1831.
*Antipyretic Action of Ergotamin. R. Rigler and E. Silberstern.—p. 1831.
Heart Block with Coronary Occlusion. H. Taterka.—p. 1832.
Liver Function Tests. R. Bauer and W. Nyiri.—p. 1833.
Unit for Dosage of Roentgen Rays. H. Küstner.—p. 1837.
Cisterna Puncture in Women. F. Fölsch.—p. 1855.

Galvanic Nystagmus.—Rosenfeld pleads for more frequent testing for galvanic nystagmus in diagnosis of organic brain lesions.

Streptococcus Infection. — Kwasniewski and Henning injected various strains of hemolytic streptococci in rabbits. They obtained arthritis in a fair percentage, especially when using younger animals. They were not always able to cultivate the cocci from the affected joints. The organisms seem to survive in the liver and spleen.

Measles Serum from Animals.—Schlossmann refuses to withdraw anything from the annihilating ("vernichtend") conclusions made by himself and others as to the value of Degkwitz' alleged protective measles serum. He never objects to scientific investigations in the clinic, but he protests against the new attempt to put the serum into the hands of practitioners, who could not now even claim good faith, in case of accident. Even the clinical tests would be of value only, he finds, if Degkwitz decided to unveil the mysteries of his "discoveries." He has had plenty of time for that since he announced in 1921 that he was cultivating measles organisms.

Exsiccosis and Carbohydrate Metabolism. — Schiff and Choremis observed hypoglycemia in fasting infants when they were given a sufficient amount of water. With a low water intake, the blood sugar remained normal or was high, although ketonuria became distinct. Administration of sodium bicarbonate raised the alkali reserve in such infants, but failed to influence the blood sugar or ketonuria. Injection of insulin had much less effect than in infants who were given water freely. Infections—even without fever—produce changes similar to those caused by lack of water. They regard the syndrome following dehydration as a pseudo-diabetic disturbance of the carbohydrate metabolism.

Antipyretic Action of Ergotamine.—Rigler and Silberstern conclude from their experiments that ergotamine decreases the production of heat—probably by inhibiting its sympathetic regulation.

Münchener medizinische Wochenschrift, Munich

73: 1603-1646 (Sept. 24) 1926

Blood Circulation During Running Competitions. A. Brandeis.—p. 1603.
Puerperal Gas Bacillus Infections. W. Lehmann.—p. 1606. Ct'd.
*Failure of Appendectomy. Kelling.—p. 1610.
*Cardiospasm. R. Schindler.—p. 1612.
Food Values. H. Fincke.—p. 1612.
Janet's Splitting Off. L. Schaetz.—p. 1615.
Medicolegal Obstetrics. M. Hofmeier.—p. 1617.
Cholecystography. W. Schöndube.—p. 1619.
Treatment of Cancer. K. Vorlaender and H. Jung.—p. 1624.

Failure of Appendectomy.—Kelling attributes to enteroptosis the persistence of abdominal distress after appendectomy. He observed such failures especially in asthenic and lean young people.

Pathogenesis and Treatment of Cardiospasm.—Schindler regards cardiospasm as psychogenic: usually a reaction of the patient to the necessity of remaining silent ("keeping his mouth shut") before disagreeable superiors. Psychotherapy cures the early stage. Dilatation of the cardia may be necessary in cases of longer standing.

Wiener klinische Wochenschrift, Vienna

39: 1103-1126 (Sept. 23) 1926

*Diabetes Since the War. H. Elias and R. Jeiteles.—p. 1103.
Feer's Disease. P. Daser.—p. 1106.
*Lumbago. W. Loewenstein and E. Rácz.—p. 1107.
*Insulin by Mouth. W. Fornet.—p. 1109.
Paravertebral Injection in Angina Pectoris. F. Brunn.—p. 1110.
Alleged Inversion of Duodenum. E. Pernkopf.—p. 1111.
Reply. A. Spitzer.—p. 1113.
Supplementary Reply. J. Schnitzler.—p. 1114.
Massage of Prostate. T. Hryntschak.—p. 1114.
Diagnosis of Gout. E. Freund.—p. 1116.
Nutrition Problems in Tuberculosis. H. Elias. Supplement.—pp. 1-8.

Diabetes Since the War.—Elias and Jeiteles found an undeniable aggravation of diabetes since the war. It parallels the improved living conditions.

Lumbago.—Loewenstein and Rácz describe a form of lumbago due to arthritic changes in one or both sacro-iliac synchondroses.

Insulin by Mouth.—Fornet mixes insulin with bile and administers it by mouth. It does not cause sudden hypoglycemia in diabetes, but he believes that it increases the sugar tolerance. In healthy subjects it produces three symptoms peculiar to insulin, the same as if it were injected: the urine rotates polarized light to the left; the subject gains in weight, and sudden discontinuing of the administration of the hormone causes glycosuria.

Zeitschrift für Kinderheilkunde, Berlin

41: 555-780 (Aug. 17) 1926

Pupillomotor Excitability in Childhood. B. de Rudder.—p. 555.
Clinical Hematology in Infants. E. Stransky.—p. 562.
Idem. E. Stransky and A. Wittenberg.—p. 585.
The Food of the Premature Infant. H. Langer.—p. 598.
Hypogalactosis. A. Gerschenson.—p. 612.
Diagnosis of Activity of Tuberculosis. E. Rominger and P. Rupprecht. —p. 619.
*Water Metabolism of Infants During Fever. L. Hirsch.—p. 653.
*Inorganic Phosphates of the Blood Serum. W. Röckemann and R. Stoffel.—p. 661.
*Protein Fever and Urea Fever. W. Baumecker and L. Schönthal.—p. 669.
Ninhydrin in Diagnosis from Cerebrospinal Fluid. H. Rau.—p. 680.
Droplet Infection and Ventilation. I. Dzialoszynski.—p. 685.
"Specific Tuberculin Lymphangitis." W. Pflüger.—p. 692.
Acid-Base Equilibrium in Blood of Children. P. György et al.—p. 700.
Idem: C. Falkenheim and F. Kruse.—p. 726.
Hemoglobinuria from Cold. H. Orel.—p. 756.
Congenital Organic Diseases of the Heart. L. Doxiades and W. Schmidt. —p. 761.
Artificial Feeding of Infants. H. Trepka-Bloch.—p. 772.

Water Metabolism of Infants During Fever.—Hirsch studied the temperature, the amount of excreted urine and the insensible perspiration in febrile infants after admin-

istration of water. The total excretion of water amounted to 67 per cent of the intake; only 26 per cent was excreted by the kidneys. The perspiration was also decreased. Normal infants receiving an excess of fluid excrete it.

Effect of Phosphates Given by Mouth on the Inorganic Phosphates in the Serum.—In studies on children from four to twelve years of age, Röckemann and Stoffel found that peroral administration of various sodium phosphates increased the amount of inorganic phosphates in blood serum. A similar result was noted in two infants of two and one-half months, when their food was changed from breast milk to whole cow's milk.

Protein Fever and Urea Fever.—Baumecker and Schönthal administered urea together with concentrated food to healthy infants, and compared the resulting fever with that occurring after administration of concentrated food, rich in proteins. They found that in the former the onset was not so early and the temperature did not rise so high. There was a more rapid excretion of the excess nitrogen and the diuresis was greater. They suggest that the febrile reaction to protein is in the nature of a thirst fever, from excessive loss of water.

Zentralblatt für Chirurgie, Leipzig

53: 2449-2512 (Sept. 25) 1926

Enteroenteroanastomosis and Gastroenteroanastomosis. H. Braun.—p. 2450.
*Goiter of the Carotid Gland. H. Bonikowsky.—p. 2455.
Symptoms of Congenital Dislocation of the Hip. A. Báron.—p. 2457.
Technic of Anastomosis Between Portal Vein and Inferior Vena Cava. K. Kleinschmidt.—p. 2459.
"Unusual Case of Subcutaneous Rupture of Intestine." W. Milkó.—p. 2461.
Incarcerated Hernia of Linea Alba. P. Gutmann.—p. 2461.
Ossifying Periostitis of Os Calcis. C. Mau.—p. 2462.

A Case of Goiter of the Carotid Gland.—For two years Bonikowsky's patient, a man, aged 19, had had a swelling, the size of an apple, near the upper margin of the thyroid, on the right side. He believed it had grown larger in the last four months. On operation the tumor was found to start two finger-breadths below the bifurcation of the carotid artery and to extend upward to the arch of the hypoglossal nerve. There was pseudopulsation. The histologic diagnosis was goiter of the carotid gland. Whether it was a true tumor or a hyperplasia of the gland is undecided.

Zentralblatt für Gynäkologie, Leipzig

50: 2234-2288 (Aug. 28) 1926

Uterography. H. Nahmmacher.—p. 2238.
Hematoma of Ruptured Pregnant Tube. R. Zimmermann.—p. 2249.
Clinical Importance of Protracted Pregnancy. J. Frigyesi.—p. 2253.
Metastatic Carcinoma of the Portio. G. Halter.—p. 2269.
Bacteriology of Healthy Stump of Umbilical Cord. K. Bihler.—p. 2272.
*Etiology of Umbilical Cord Tears. S. Joseph and E. Kohn.—p. 2275.
Therapeutic Experiences with Pertubation. G. Schwarzwäller.—p. 2280.
Calculus of the Ovary. K. Markovits.—p. 2281.

Etiology of Tears of the Umbilical Cord.—In two of the three cases here reported the cause of the tear remained doubtful. In the first case, on the third day of labor in a primipara, aged 32, the fetal heart tones suddenly ceased. The child was extracted by forceps, but did not live. The cord was found to be torn through 5 cm. distant from its umbilical insertion. It was wound twice around the neck, and had obviously suffered during the protracted labor, since it was thin, flabby, and brownish in color. In the second case, the tear, consisting of an isolated rupture of an artery, took place after a normal birth. The cord was much twisted and the blood was under high pressure. There was no sign of syphilis in either case. In a third case, the tear followed an attempt to express the placenta by Crédé's method after delivery by forceps, and was doubtless caused by heightening of the blood pressure from the attempt, acting on tissues weakened by a long labor.

Zentralblatt für innere Medizin, Leipzig

47: 905-920 (Sept. 18) 1926

Elaboration, Action and Elimination of Bismuth. K. Stephan.—p. 905.

Kazanskiy Meditsinskiy Jurnal, Kazan

22: 477-774 (May-June) 1926. Partial Index

Association of Malignant Tumors. G. G. Nepryakhin.—p. 514.
*Antigen in Serum of Patients with Fever. Savchenko and Baronoff.—p. 524.
*Forms of Arterial Hypertension. P. N. Nikolaeff.—p. 536.
*Changes of Leukocyte Formula from Anesthesia. B. A. Zhivova.—p. 581.
Method of Determining Bleeding Time. Smirnoff and Klimoff.—p. 587.
Two Cases of Blindness from Quinine. N. M. Morozoff.—p. 623.
Method of Measuring True Conjugate Diameter. K. I. Zelenin.—p. 630.
Arsonvalization in the Vomiting of Pregnancy. V. E. Odintsoff.—p. 638.
Hypertonic Alkali Solutions in Treatment of Eclampsia. G. M. Shpolyanskiy.—p. 641.

Serum of Patients with Febrile Disease and Reaction of Deviation of Complement. — Savchenko and Baronoff's research was made on alcoholic extracts of blood from patients with infectious diseases, with fever (malaria) or without fever (syphilis). Specific antigens inducing the reaction of deviation of complement in the corresponding serums were not detected. Serums from patients with any febrile process fixed the complement when mixed with alcoholic extracts of blood from healthy persons and also from those with various diseases.

Types of High Blood Pressure.—Nikolaeff differentiates three types of arterial hypertension. The systolic type is usually observed in persons above the age of 50, with arteriosclerosis of the aorta and proximal arteries. The tachycardiac type is associated with acceleration of cardiac contractions from disturbances of the endocrine and vegetative systems. The diastolic type is due to excessive tonicity of the capillaries. This favors the occurrence of arteriosclerosis, with or without kidney lesions. Changes in the endocrine and vegetative systems are evidently an important factor in this type also. Arterial hypertension is a sign of adaptation of the heart to disturbances in the circulation. Therefore it should not be therapeutically combated.

Changes of Leukocyte Formula in Connection with Anesthesia.—In numerous gynecologic cases, Zhivova found the leukocyte formula shifted to the left immediately after an operation performed under chloroform plus ether anesthesia. This phenomenon, which usually persisted for three days, is ascribed to the action of chloroform. It was not seen in the case of thirty-five similar operations done under local anesthesia.

Meditsin. Obozr. Nizhn. Povolzhya, Astrakhan

5: 3-119 (July-August) 1926. Partial Index

*Innervation of Placental Vessels. J. P. Fedotoff.—p. 3.
Alterability of Micro-Organisms. B. I. Kurochkin.—p. 12.
Sedimentation of Erythrocytes and Mud-Bath Treatment. B. N. Kogan.—p. 17.
Variations of Fever Curve in Recurrent Fever. S. I. Telyatnikoff.—p. 22.
Constitution and Neuroses. D. Z. Sheffer.—p. 31.
*Scarification Treatment in Gynecology. V. I. Selivanoff.—p. 42.
Pregnancy in Duplex Uterus. B. L. Mitkevich.—p. 50.

Distribution of Nerves in Placental Vessels.—Fedotoff introduced epinephrine, chloroform or barium chloride into fresh human placentas. Constriction of the vessels followed. Pilocarpine, caffeine or quinine caused their dilatation. These experiments, he says, confirm the presence of sympathetic and parasympathetic nerves in the placenta.

Scarification in Treatment of Genital Diseases in Women.—Selivanoff believes that the method of producing small, superficial incisions on the uterine cervix should be more generally used in gynecologic practice. His eight patients with chronic endometritis, metritis, salpingo-ovaritis or erosion were not definitely cured by this treatment, but they were considerably relieved, sometimes for a long period. The method proved to be especially effectual in patients with congestive phenomena in the pelvis. In mixed treatment, the incisions accelerated absorption of the drugs.

Mikrobiologicheskiy Jurnal, Leningrad

3: 1-150 (Jan.-April) 1926. Partial Index

The Work of Metchnikoff. D. K. Zabolotniy.—p. 1.
Preparation of Antiscarlet Fever Serum and Vaccine. S. A. Belyavtseff.—p. 10.
*Skin Immunization Against Tetanus. A. Besredka and S. Nikagawa.—p. 17.

Problems of Antirabic Vaccination. N. F. Gamaleya.—p. 31.
Immunity and Leukocytes. V. Z. Gladkiy and S. G. Samsonoff.—p. 42.
Besredka's Streptococcus Filtrates for Erysipelas. K. T. Glukhoff.—p. 48.
*Adsorption Property of Erythrocytes and Diphtheria Immunity. M. P. Gluzman.—p. 56.
Skin Reaction in Streptococcus Infection. Kosmodemyanskiy and Prètasoff.—p. 87.
*Precipitation of Diphtheria Toxin in Iso-Electric Zone. Predtechenskiy and Shevyakova.—p. 109.

Local Passive Immunization Against Tetanus by Absorption Through the Skin.—Besredka and Nikagawa applied dressings impregnated with tetanus antiserum, alone or incorporated in dehydrated lanolin (2 parts of serum to 1 part of the fat), to the shaved skin of guinea-pigs for one day. Tetanus toxin was then injected beneath the skin of the animals. They did not develop any reaction. In another series of guinea-pigs the antiserum dressing was applied three hours after the injection; it induced a mild reaction; applied after six hours, it was without reaction. Evidently the tetanus antitoxin, like the toxin, is absorbed by the skin cells, acting as fixed phagocytes; it does not enter into the general blood circulation. The immunity thus induced is a local and passive one.

Adsorption Property of Erythrocytes and Immunization Against Diphtheria.—Gluzman's aim was to verify Zbarsky's theory connecting the mechanism of immunization with adsorption of toxin by the erythrocytes. Analysis of defibrinated blood of horses and guinea-pigs showed that not only the erythrocytes of animals sensitive to diphtheria but also the erythrocytes of those immunized possess the property of adsorbing diphtheria toxin. Thus it is shown once more that it is the antitoxin of the serum which neutralizes the toxin in the organism.

Precipitation of Diphtheria Toxin in Iso-Electric Zone.—Predtechenskiy and Shevyakova state that the precipitation of diphtheria toxin occurs strictly within the limits of a certain zone (2.8 p_H to 6 p_H), the maximum lying between 4.2 and 4.6 p_H. The limits of flocculation correspond to chemical properties of the toxin and also to the anion of the acid used. The use of precipitation-inducing acids makes it possible to obtain toxin free from most nonspecific protein substances.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

70: 1383-1502 (Sept. 25) 1926

*Congenital Anemia with Erythroblastosis. E. S. Frank.—p. 1384.
Papillomas of the Larynx. C. Bonne.—p. 1390.
Roentgen-Ray Therapy of Cancer of the Breast. H. Lammers.—p. 1396.
Bactericidal Action of Blood on Staphylococci. L. K. Wolff.—p. 1411.
Enlargement of Lymph Glands in Carcinoma. G. C. v. Walsem.—p. 1417.
Typhoid Infection and Drinking Water. P. Ingelse.—p. 1419.
Empyema with Diaphragmatic Hernia. A. Verhagen.—p. 1421.

Congenital Anemia with Erythroblastosis.—Frank reports the case of an infant who died of severe anemia thirteen days after birth. The urine was normal and the Wassermann reaction in both child and mother was negative. At necropsy myeloid tissue was found in the capillaries of the liver. The hepatic cells contained granular cytoplasm with vacuoles. Myeloid tissue and granular pigments containing iron were conspicuous in the spleen. There were large numbers of leukocytes in the blood of all the organs, especially the lungs. The child had evidently been affected in the uterus by an erythroblastosis, which had not been serious enough to disturb the normal development of the pregnancy.

Acta Medica Scandinavica, Stockholm

64: 323-495 (Sept. 9) 1926

*Fatty Diarrhea. T. E. Hess Thaysen.—pp. 323 and 352.
Roentgenogram in Pulmonary Tuberculosis. J. Frandsen and P. Jacoby.—p. 401.
Hyperchlorhydria. T. L. Hardy.—p. 427.
Antagonism Between Thyroid Gland and Pancreas. E. Lundberg.—p. 470.

Fatty Diarrhea.—Basing his observations on five personal cases and twenty-one cases recorded in the literature, Thaysen claims that pancreatogenous fatty diarrhea usually depends on a chronic infection of the pancreas, often of syphilitic nature. Carcinoma and cystic degeneration of the pancreas are also etiologic factors. When glycosuria or azotorrhea are absent, the blood sugar curve after administration of 1 Gm. of dextrose per kilogram of body weight is an important diagnostic aid. In his four cases of nontropical sprue the fatty diarrhea was more resistant than in tropical sprue, and did not respond to milk treatment. Here, too, the blood-sugar curve aids in the diagnosis. He does not consider sprue as identical with pernicious anemia.

Finska Läkaresällskapets Handlingar, Helsingsfors

68: 805-884 (Sept.) 1926

*Vulvovaginitis in Children. W. Pipping.—p. 813.
*Duodeno-Jejunal Diverticulum. A. Krogius.—p. 835.
Vestibular Apparatus in Aviation. F. Leiri.—p. 848.

Vulvovaginitis in Children.—Pipping reviews epidemics of gonorrheal vulvovaginitis in children's hospitals. Little girls are predisposed to contracting gonorrheal infection on account of the undeveloped labia majora, which do not give sufficient protection to the urethra and the vagina. The alkaline reaction of the vaginal secretion offers a good culture medium for the growth of gonococci.

Duodenojejunal Diverticulum as a Cause of Intestinal Occlusion.—Krogius reports the case of a woman, aged 64, who without previous dyspeptic disturbances suddenly developed symptoms of intestinal occlusion. Operation revealed a duodenojejunal diverticulum, surrounded by adhesions; adhesions were also present between the uppermost loop of the jejunum and the transverse mesocolon. After invagination of the diverticulum into the intestinal lumen, the symptoms disappeared.

Hospitalstidende, Copenhagen

69: 837-864 (Sept. 2) 1926

*Indexes and Diameter of Erythrocytes. S. Jörgensen and E. J. Warburg.—p. 837.
*Pathologic Metabolism in the Obese. H. C. Hagedorn et al.—p. 853.

Indexes and Diameter of Erythrocytes.—Jörgensen and Warburg review the different methods of determining the diameter of erythrocytes. They found an average diameter of 7.7 per cent in serum and an average volume of 43 per cent per 5 million erythrocytes, using hematocrit tubes 10 cm. long and defibrinated venous blood.

Pathology of Metabolism in the Obese.—Hagedorn, Holten and Johansen studied thirty obese subjects, four men and twenty-six women, and sixteen normal persons (five men and eleven women), in regard to diet, exercise, rest, respiratory quotient and weight. He ascribes obesity mainly to abnormal formation of fat from carbohydrates, due to faulty metabolism. The respiratory quotient was low in proportion to the excess weight.

Ugeskrift for Læger, Copenhagen

88: 875-892 (Sept. 30) 1926

Progressive Anemia in Pregnancy. P. Verning.—p. 875.
*Investigations in Racial Biology in Greenland. E. Bay-Schmith.—p. 880.
Value of the Proteins of Grains. M. Hindhede.—p. 882.

Investigations in Racial Biology in Greenland.—Bay-Schmith studied the coagulation time and the blood types of the different races in Greenland. Pure-blooded Eskimos had a shorter coagulation time than pure-blooded Danes; Greenlanders and mixed types showed intermediate values. Of the total number of blood samples (230), 54 per cent belonged to the first (Jansky) and 36 per cent to the second group. Immunity against diphtheria was tested by the Schick reaction. The ratio between positive and negative reactions was about 1:1, except in the second group, where it was about 3:2.

88: 893-912 (Oct. 7) 1926

*Distribution of Sugar in Plasma and Erythrocytes. R. Ege and K. M. Hansen.—p. 893.
Pathogenesis and Therapy of Bronchial Asthma. A. Brems.—p. 901.

Distribution of Sugar in Plasma and Erythrocytes of Human Blood.—Ege and Hansen found a sugar ratio of about 1 between erythrocytes and plasma in the blood of fasting individuals. They noted a considerable amount of "fixed sugar," that is, sugar which is bound to the corpuscles by reducing substances and which could not easily be washed off with Ringer's solution or blood plasma, both of which have a lower sugar concentration.